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for
RFP-1055-02

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

Andrew Reed, Ph.D.
Monsanto Company
600 13th Street, N.W., Suite 660
Washington, D.C. 20005

FEB 6 2002

Dear Dr. Reed:

Subject: Review of the Insect Grower Guide and Grower Agreements
Bollgard Cotton 478
EPA Reg. No. 524-~~489~~
Your submission dated 31 October, 2001

The Insect Resistance Management (IRM) Guide and Grower Agreements referred to above submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, have been received, and reviewed as per the terms of the conditions of registration for Bollgard cotton.

Your current grower agreement system does not have annual affirmation. The Agency has required under 40 CFR Parts 152 and 174 Plant-Incorporated Protectants section III(B)(4)(3) of the *Bt* Plant-Incorporated Protectants Rule that you provide The Agency by 15 March, 2002, a system which is reasonably likely to assure that persons purchasing the *Bt* cotton product, Bollgard cotton, will affirm annually that they are contractually bound to comply with the requirements of the IRM program. Please refer to the following enclosure for more detailed information.

Should you have any questions, you may contact either Sharlene Matten, Ph.D. at 703.605.0514 or Leonard Cole at 703.305.5412. We hope that you find this information beneficial.

Sincerely,

Janet L. Andersen, Ph.D., Director
Biopesticides and Pollution
Prevention Division (7511C)

CONCURRENCES

SYMBOL	~~7511C~~ Enclosures	7511C						
SURNAME	Cole	Hutton						
DATE	1/30/02	2/4/02						

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

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OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

Andrew Reed, Ph.D.
Monsanto Company
600 13th Street, N.W., Suite 660
Washington, D.C. 20005

Dear Dr. Reed:

Subject: Bollgard Cotton Community Refuge Program
Monsanto's Submission of the 2001 Bollgard Cotton Community Refuge Program
EPA Reg. No. 524-478
Your submission dated 12 November, 2001

Your request to waive the requirement (please refer to EPA letter dated 1 March, 2001) for Monsanto to conduct a second telephone survey of community refuge coordinators in 2001 is acceptable. We agree that minimal additional value will be gained beyond that of the first survey; however, we request additional detailed information regarding the design and conduct of the first survey as discussed in our teleconference held 7 December, 2001. In particular, we are asking for the detailed responses to each survey question by state and county (if possible), the details regarding the field visits and how non-responses were addressed.

Your request to amend the terms and conditions of 29 September, 2001 to include the compliance survey of the community refuge program as part of the overall Bollgard cotton compliance assurance program for 2002 is not necessary. The existing terms and conditions of registration state: "The community refuge program users must be included in telephone compliance survey and the on-farm visits to be conducted by the registrant under section 3(c) below." Section 3(c) describes the terms and conditions for "IRM Education and IRM Compliance Monitoring Programs"; therefore, we expect that Monsanto will provide EPA the details how compliance for the community refuge program will be included in the overall compliance assurance program to be submitted to the Agency by 31 January, 2002.

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Should you have any questions, please do not hesitate to contact Sharlene Matten, Ph.D. at 703.605.0514 or Leonard Cole at 703.305.5412. We hope that you find this information helpful.

Sincerely,

Janet L. Andersen, Ph.D., Director
Biopesticides and Pollution
Prevention Division (7511C)

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

Andrew Reed, Ph.D.
Monsanto Company
600 13th Street, N.W., Suite 660
Washington D.C. 20005

FEB 6 2002

Dear Dr. Reed:

Subject: Monsanto's submission of two draft research program proposals as required per terms and conditions of the registration of Bollgard® cotton
EPA Reg. No. 524-478
Your submission dated November 30, 2001

EPA has reviewed your two research program draft protocols: a) Contribution of Alternate (Non-Cotton) Hosts to Bollgard Cotton Refuge and b) Supplemental Spray Effects on *Helicoverpa zea* Populations in Bollgard Cotton. There are improvements in each of these proposals that need to be made. The final protocols are due March 15, 2002.

In general, there is insufficient detail in both protocols to clearly identify the data that are necessary, the appropriate end-points to be measured, and the methods by which the data are to be collected. In addition, since the locations and specific methodology are not identified, it is impossible to determine to what extent the data can be used in multiple cotton production areas across the mid-South and Southeastern US in which *Heliothis virescens* (tobacco budworm) and *Helicoverpa zea* (cotton bollworm) are major economic pests. Extensive and systematic regional studies should be conducted.

Alternate Host Protocol

Monsanto has proposed two options to address the relative contribution of alternate hosts as effective refuge. Under Option 1, the objective is to conduct life-table studies on crop hosts other than cotton in representative cotton-growing regions. The studies would compare *Helicoverpa zea* pre-pupal production in the alternate crop hosts with pre-pupal production in the sprayed and unsprayed non-Bollgard cotton refuge options. Under Option 2, the objective is to

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compare overall moth production via pheromone or light traps throughout the season in representative cotton production areas that contain the following treatments or refuge options: 1) 100% Bollgard cotton (need EPA approval), 2) 95% Bollgard, 5% non-Bollgard cotton (untreated), 3) 80% Bollgard cotton, 20% non-Bollgard cotton (treated), and 100% non-Bollgard cotton.

Upon review, Option 1 is preferable to Option 2. It more directly measures the relative contribution and synchrony of *H. zea* production in alternate crop hosts. Trap catches as described in Option 2 would not provide information about the origin of moths on different hosts, the relative contribution nor quantity of moths from different hosts, nor the synchrony of emergence of moths. There would be no information to differentiate between long-range versus short-range movement of *H. zea*. The use of gossypol would not be that useful except to determine the percentage of adults feeding on cotton versus all other possible sources. This method, as noted in Option 2, would have to more fully described with appropriate references. However, some modification of Option 2 coupled with Geopositional Information System (GIS) mapping would help determine the optimal spatial configuration of refuge and transgenic cotton fields (see description below). We also recognize that it would be difficult and time-consuming to perform life-table studies (Option 1) on numerous crop hosts in multiple cotton-growing regions in a two-year timetable.

The relative value of non-cultivated hosts, such as weeds, is too difficult to determine and will be highly variable from year to year. Studies by other researchers on non-cultivated hosts, such as Drs. Schneider and Parker from Mississippi State University, have been inconclusive about the relative contribution of alternate non-cultivated hosts to production of *H. zea*. Because the focus of this research is on structured refuge (i.e., a specific set of crops/non-crops hosts that are planted within a specific distance (< 1 mile) from the Bollgard (or other Bt) cotton fields that produce susceptible *H. zea* moths to randomly mate with putative resistant *H. zea* moths), it is unclear how one would quantify the effective production and synchrony of *H. zea* moths on weedy hosts with those moths produced on Bollgard cotton from year to year and across multiple cotton production regions. Artificial infestations of weedy hosts in strip-tests might be useful.

Therefore, the following alternate hosts (other than cotton) should be of prime importance to evaluate: grain sorghum, corn, soybean, and peanuts. The evaluation of each of these alternate hosts should be determined based on at least four to five distinct geographic areas in the mid-South and Southeastern cotton production areas in which *Heliothis virescens* and *H. zea* are important economic pests, e.g., North Carolina, South Carolina Texas, Louisiana, Arkansas, Mississippi, South Carolina, Georgia, Alabama, Florida, Missouri, and Tennessee on irrigated and non-irrigated soils. In every cotton-production region, there will be different alternate hosts

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and they may function differently under different environmental and agronomic conditions. The experimental locations will need to be specified in the final protocol. The extent to which each location is representative of a larger cotton production area should be clearly described.

Based on our analysis, the relative contribution of alternate cultivated hosts to *H. zea* production, density, dispersal, and synchrony may be more easily determined through the following types of experiments:

*1) Adult emergence studies. These studies would provide useful information about the relative adult moth production on different hosts. Different landscapes (different crops and phenologies) would have a bearing on the range of movement. Systematic, landscape use of adult emergence traps coupled to Geographic Information System (GIS) mapping might enhance these studies. Both artificially-infested and naturally-infested situations should be considered. These studies might provide information about the relative contribution of alternate hosts compared to cotton in the production of susceptible *H. zea*. [*These studies might be the most useful in the short-term.]

These type of studies were useful in showing that alternate hosts (cultivated and non-cultivated) did not play a big role as effective refuges in the production of European corn borer for resistance management in Bt corn (transgenic corn that expresses insecticidal Cry toxins from *Bacillus thuringiensis*). (See Enclosure 1, Studies performed by Richard Hellmich and other associates, USDA/ARS, Ames, IA; and Losey et al. 2001. Evaluation of non-corn host plants as a refuge in a resistance management program for European corn borer (Lepidoptera: Crambidae) on Bt-Corn. Environ. Entomol. 30: 728-735.)

Hellmich examined: 1) high density planted popcorn as a potential refuge, 2) millet, oats, and popcorn, 3) quantified ECB natural refuge (weeds and other crop hosts) within and near cornfields using egg masses and emergence cages, and 4) larval movement between Bt corn hybrids and non-transgenic plants.

Losey et al. (2001) compared egg mass recruitment, larval survival, adult emergence on corn and other hosts of European corn borer to assess the potential of these plants to act as a refuge in a resistance management program.

These researchers concluded that non-corn hosts did not appear likely to provide a substantial number of corn borer individuals susceptible to Bt in comparison with the number expected from the 20% planted non-Bt corn refuge mandated by EPA.

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Form 1320-1 (12-70)

Should you have any questions, please do not hesitate to contact either Dr. Sharlene Matten at 703-605-0514 or Leonard Cole at 703-305-5412.

Sincerely,

Janet L. Andersen, Ph.D., Director
Biopesticides and Pollution
Prevention Division (7511C)

Enclosures

CONCURRENCES								
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[Federal Register: May 11, 2001 (Volume 66, Number 92)]
[Rules and Regulations]
[Page 24061-24066]
From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr11my01-6]

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 180

[OPP-301123; FRL-6781-6]
RIN 2070-AB78

Bacillus Thuringiensis Cry3Bb1 and Cry2Ab2 Protein and the Genetic Material Necessary for its Production in Corn and Cotton; Exemption From the Requirement of a Tolerance

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This regulation establishes a time-limited exemption from the requirement of a tolerance for residues of the plant-pesticides Bacillus thuringiensis Cry3Bb1 protein and the genetic material necessary for its production in corn on field corn, sweet corn, and popcorn and the plant-pesticides Bacillus thuringiensis Cry2Ab2 protein and the genetic material necessary for its production in corn on field corn, sweet corn, popcorn, or in cotton on cotton seed, cotton oil, cotton meal, cotton hay, cotton hulls, cotton forage, and cotton gin byproducts when applied/used as a plant-pesticide. Monsanto Company submitted a petition to EPA under the Federal Food, Drug, and Cosmetic Act, as amended by the Food Quality Protection Act of 1996, requesting an exemption from the requirement of a tolerance. This exemption from the requirement of a tolerance will expire on May 1, 2004.

DATES: This regulation is effective May 11, 2001. Objections and requests for hearings, identified by docket control number [OPP-301123], must be received by EPA, on or before July 10, 2001.

ADDRESSES: Written objections and hearing requests may be submitted by mail, electronically, or in person. Please follow the detailed instructions for each method as provided in Unit IX. of the SUPPLEMENTARY INFORMATION. To ensure proper receipt by EPA, your objections and hearing requests must identify docket control number OPP-301123 in the subject line on the first page of your response.

FOR FURTHER INFORMATION CONTACT: By mail: Mike Mendelsohn, c/o Product Manager (PM) 90, Biopesticides and

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Pollution Prevention Division (7511C), Environmental Protection Agency, 1200 Pennsylvania Ave., NW.,Washington, DC 20460; telephone number: (703) 308-8715; and e-mail address: mendelsohn.mike@epa.gov.

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this Action Apply to Me?

You may be affected by this action if you are an agricultural producer, food manufacturer, or pesticide manufacturer. Potentially affected categories and entities may include, but are not limited to:

Categories	NAICS codes	Examples of potentially affected entities
Industry	111	Crop production
	112	Animal production
	311	Food manufacturing
	32532	Pesticide manufacturing

This listing is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be affected by this action. Other types of entities not listed in the table could also be affected. The North American Industrial Classification System (NAICS) codes have been provided to assist you and others in determining whether or not this action might apply to certain entities. If you have questions regarding the applicability of this action to a particular entity, consult the person listed under FOR FURTHER INFORMATION CONTACT.

B. How Can I Get Additional Information, Including Copies of this Document and Other Related Documents?

1. Electronically. You may obtain electronic copies of this document, and certain other related documents that might be available electronically, from the EPA Internet Home Page at http://www.epa.gov/. To access this document, on the Home Page select ``Laws and Regulations,'' ``Regulations and Proposed Rules,`` and then look up the entry for this document under the ``Federal Register--Environmental Documents.'' You can also go directly to the Federal Register listings at http://www.epa.gov/fedrgstr/.

2. In person. The Agency has established an official record for this action under docket control number OPP-301123. The official record consists of the documents specifically referenced in this action, and other information related to this action, including any information claimed as Confidential Business Information (CBI). This official record includes the documents that are physically located in the docket, as well as the documents that are referenced in those documents. The public version of the official record does not include any information claimed as CBI. The public version of the official record, which includes printed, paper versions of any electronic comments submitted during an applicable comment period is available for inspection in the Public Information and Records Integrity Branch (PIRIB), Rm. 119, Crystal Mall #2, 1921 Jefferson Davis Hwy., Arlington, VA, from 8:30 a.m. to 4 p.m., Monday through Friday, excluding legal holidays. The PIRIB telephone number is (703) 305-5805.

II. Background and Statutory Findings

In the Federal Register of October 10, 1997 (62 FR 52998) (FRL-5748-5), EPA issued a notice pursuant to section 408 of the Federal Food, Drug, and Cosmetic Act (FFDCA), 21 U.S.C. 346a(e), as amended by the Food Quality Protection Act (FQPA) (Public Law 104-170) announcing the filing of a pesticide tolerance petition, petition number 7F4888, by Monsanto Company, 700 Chesterfield Parkway, North, St. Louis, MO 63198. This notice included a summary of the petition prepared by the petitioner Monsanto Company. There were no comments received in response to the notice of filing.

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The petition requested that 40 CFR 180 be amended by establishing an exemption from the requirement of a tolerance for residues of the plant pesticides consisting of Bacillus thuringiensis Cryl, Cry2, and Cry3 classes of proteins and the genetic material necessary for the production of these proteins in or on all raw agricultural commodities. In August and November of 1999, Monsanto amended their petition to narrow its scope to the following Cry proteins: Cry1Ab, Cry1Ac, Cry2Aa, Cry2Ab, Cry3Aa, and Cry3Bb in or on all plant raw agricultural commodities. While this final rule is limited to particular Cry3Bb in or on corn and Cry2Ab proteins in or on corn and cotton (**Cry3Bb1** and Cry2Ab2), the Agency may at future dates issue final rules for the other specified Cry protein plant-pesticides on particular plant agricultural commodities.

III. Risk Assessment

Pursuant to section 408(c)(2)(A)(i) of the FFDCA, EPA may establish or leave in effect an exemption from the requirement for a tolerance (the legal limit for a pesticide chemical residue in or on a food) only if EPA determines that the tolerance exemption is ``safe.'' With respect to an exemption for a pesticide chemical residue, section 408(c)(2)(A)(ii) defines ``safe'' to mean that ``there is a reasonable certainty that no harm will result from aggregate exposure to the pesticide chemical residue, including all anticipated dietary exposures and all other exposures for which there is reliable information.'' This includes exposure through drinking water and in residential settings, but does not include occupational exposure. Section 408(b)(2)(C) requires EPA to give special consideration to exposure of infants and children to the pesticide chemical residue in establishing a tolerance or tolerance exemption and to ``ensure that there is a reasonable certainty that no harm will result to infants and children from aggregate exposure to the pesticide chemical residue. * * *'' Additionally, section 408(b)(2)(D) requires that the Agency consider ``available information'' concerning, inter alia, the cumulative effects of a particular pesticide's residues and ``other substances that have a common mechanism of toxicity.''

EPA performs a number of analyses to determine the risks from aggregate exposure to pesticide residues. First, EPA determines the toxicity of pesticides. Second, EPA examines exposure to the pesticide through food, drinking water, and through other exposures that occur as a result of pesticide use in residential settings.

IV. Toxicological Profile

Pursuant to section 408(b)(2)(D) of FFDCA, EPA has reviewed the available scientific data and other relevant information in support of this action and considered its validity, completeness, and reliability and the relationship of this information to human risk. EPA has also considered available information concerning the variability of the sensitivities of major identifiable subgroups of consumers, including infants and children.

Data have been submitted demonstrating the lack of mammalian toxicity at high levels of exposure to the pure **Cry3Bb1** and Cry2Ab2 proteins. These data demonstrate the safety of the products at levels well above maximum possible exposure levels that are reasonably anticipated in the crops. This is similar to the Agency position regarding toxicity and the requirement of residue data for the microbial Bacillus thuringiensis products from which this plant-pesticide was derived

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(See 40 CFR 158.740(b)(2)(i)). For microbial products, further toxicity testing and residue data are triggered by significant acute effects in studies such as the mouse oral toxicity study, to verify the observed

effects and clarify the source of these effects (Tiers II and III).

Two acute oral studies were submitted for **Cry3Bb1** proteins. These studies were done with two variants of the **Cry3Bb1** protein engineered with either four or five internal amino acid sequence changes to enhance activity against the corn rootworm. The acute oral toxicity data submitted support the prediction that the **Cry3Bb1** protein would be non-toxic to humans. Male and female mice (10 of each) were dosed with 36, 396, or 3,780 milligrams/kilograms bodyweight (mg/kg bwt) of **Cry3Bb1** protein for one variant. The mice were dosed with 38.7, 419, or 2,980 mg/kg bwt of **Cry3Bb1** protein for the other variant. In one study, two animals in the high dose group died within a day of dosing. These animals both had signs of trauma probably due to dose administration (i.e., lung perforation or severe discoloration of lung, stomach, brain and small intestine). No clinical signs were observed in the surviving animals and body weight gains were recorded throughout the 14-day study for the remaining animals. Gross necropsies performed at the end of the study indicated no findings of toxicity attributed to exposure to the test substance in either study. No other mortality or clinical signs attributed to the test substance were noted during either study.

The acute oral toxicity data submitted support the prediction that the Cry2Ab2 protein would be non-toxic to humans. Male and female mice (10 of each) were dosed with 67, 359, and 1,450 mg/kg bwt of Cry2Ab2 protein. Outward clinical signs were observed and body weights recorded throughout the 14-day study. Gross necropsies performed at the end of the study indicated no findings of toxicity attributed to exposure to the test substance. No mortality or clinical signs attributed to the test substance were noted during the study. When proteins are toxic, they are known to act via acute mechanisms and at very low dose levels (Sjoblad, Roy D., et al. ``Toxicological Considerations for Protein Components of Biological Pesticide Products,'' Regulatory Toxicology and Pharmacology 15, 3-9 (1992)). Therefore, since no effects were shown to be caused by the plant-pesticides, even at relatively high dose levels, the **Cry3Bb1** and Cry2Ab2 proteins are not considered toxic. Further, amino acid sequence comparisons showed no similarity between **Cry3Bb1** and Cry2Ab2 proteins to known toxic proteins available in public protein data bases.

Since **Cry3Bb1** and Cry2Ab2 are proteins, allergenic sensitivities were considered. Current scientific knowledge suggests that common food allergens tend to be resistant to degradation by heat, acid, and proteases, may be glycosylated and present at high concentrations in the food.

Data have been submitted that demonstrate that the **Cry3Bb1** protein is rapidly degraded by gastric fluid in vitro. In a solution of simulated gastric fluid (pH 1.2 - U.S. Pharmacopeia), complete degradation of detectable **Cry3Bb1** protein occurred within 30 seconds. Insect bioassay data indicated that the protein loss insecticidal activity within 2 minutes of incubation in SGF. Incubation in simulated intestinal fluid resulted in a~59 kDa protein digestion product. A comparison of amino acid sequences of known allergens uncovered no evidence of any homology with **Cry3Bb1**, even at the level of 8 contiguous amino acids residues.

Data have been submitted that demonstrate that the Cry2Ab2 delta-endotoxin is rapidly degraded by gastric fluid in vitro. In a solution of simulated gastric fluid (pH 1.2 - U.S. Pharmacopeia), complete degradation of detectable Cry2Ab2 protein occurred within 15 seconds. Incubation in simulated intestinal fluid resulted in a ~50 kDa protein digestion product. A comparison of amino acid sequences of known allergens uncovered no evidence of any homology with Cry2Ab2, even at the level of 8 contiguous amino acids residues.

The potential for the **Cry3Bb1** and Cry2Ab2 proteins to be food allergens is minimal. Regarding toxicity to the immune system, the acute oral toxicity data submitted support the prediction that the **Cry3Bb1** and Cry2Ab2 proteins would be non-toxic to humans. When proteins are toxic, they are known to act via acute mechanisms and at

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very low dose levels (Sjoblad, Roy D., et al. ``Toxicological Considerations for Protein Components of Biological Pesticide Products,'' Regulatory Toxicology and Pharmacology 15, 3-9 (1992)). Therefore, since no effects were shown to be caused by the plant-pesticides, even at relatively high dose levels, the **Cry3Bb1** and Cry2Ab2 proteins are not considered toxic.

V. Aggregate Exposures

Pursuant to FFDCA section 408(b)(2)(D)(vi), EPA considers available information concerning aggregate exposures from the pesticide residue in food and all other non-occupational exposures, including drinking water from ground water or surface water and exposure through pesticide use in gardens, lawns, or buildings (residential and other indoor uses).

The Agency has considered available information on the aggregate exposure levels of consumers (and major identifiable subgroups of consumers) to the pesticide chemical residue and to other related substances. These considerations include dietary exposure under the tolerance exemption and all other tolerances or exemptions in effect for the plant-pesticide chemical residue, and exposure from non-occupational sources. Exposure via the skin or inhalation is not likely since the plant-pesticide is contained within plant cells, which essentially eliminates these exposure routes or reduces these exposure routes to negligible. Oral exposure, at very low levels, may occur from ingestion of processed corn products and, potentially, drinking water. However a lack of mammalian toxicity and the digestibility of the plant-pesticides have been demonstrated. The use sites for the **Cry3Bb1** and Cry2Ab2 proteins are all agricultural for control of insects. Therefore, exposure via residential or lawn use to infants and children is not expected. Even if negligible exposure should occur, the Agency concludes that such exposure would present no risk due to the lack of toxicity demonstrated for the **Cry3Bb1** and Cry2Ab2 proteins.

VI. Cumulative Effects

Pursuant to FFDCA section 408(b)(2)(D)(v), EPA has considered available information on the cumulative effects of such residues and other substances that have a common mechanism of toxicity. These considerations included the cumulative effects on infants and children of such residues and other substances with a common mechanism of toxicity. Because there is no indication of mammalian toxicity to these plant-pesticides, we conclude that there are no cumulative effects for the **Cry3Bb1** and Cry2Ab2 proteins.

VII. Determination of Safety for U.S. Population, Infants and Children

A. Toxicity and Allergenicity Conclusions

The data submitted and cited regarding potential health effects for the **Cry3Bb1** and Cry2Ab2 proteins include the characterization of the expressed **Cry3Bb1** protein in corn and the

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expressed Cry2Ab2 protein in corn and cotton, as well as the acute oral toxicity, and in vitro digestibility of the proteins. The results of these studies were determined applicable to evaluate human risk and the validity, completeness, and reliability of the available data from the studies were considered.

Adequate information was submitted to show that the Cry3Bb1 test material derived from microbial cultures was biochemically and, functionally similar to the protein produced by the plant-pesticide

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ingredients in corn. Adequate information was submitted to show that the Cry2Ab2 test material derived from microbial cultures was biochemically and, functionally similar to the protein produced by the plant-pesticide ingredients in corn and cotton. Production of microbially produced protein was chosen in order to obtain sufficient material for testing.

The acute oral toxicity data submitted supports the prediction that the **Cry3Bb1** and Cry2Ab2 proteins would be non-toxic to humans. When proteins are toxic, they are known to act via acute mechanisms and at very low dose levels (Sjoblad, Roy D., et al. ``Toxicological Considerations for Protein Components of Biological Pesticide Products,'' Regulatory Toxicology and Pharmacology 15, 3-9 (1992)). Since no effects were shown to be caused by **Cry3Bb1** and Cry2Ab2 proteins, even at relatively high dose levels (3,780 mg **Cry3Bb1**/kg bwt and 1,450 mg/kg bwt of Cry2Ab2 protein), the **Cry3Bb1** and Cry2Ab2 proteins are not considered toxic. This is similar to the Agency position regarding toxicity and the requirement of residue data for the microbial Bacillus thuringiensis products from which this plant-pesticide was derived. See 40 CFR 158.740(b)(2)(i). For microbial products, further toxicity testing and residue data are triggered by significant acute effects in studies such as the mouse oral toxicity study to verify the observed effects and clarify the source of these effects (Tiers II and III).

Cry3Bb1 and Cry2Ab2 residue chemistry data were not required for a human health effects assessment of the subject plant-pesticide ingredients because of the lack of mammalian toxicity.

Both available information concerning the dietary consumption patterns of consumers (and major identifiable subgroups of consumers including infants and children); and safety factors which, in the opinion of experts qualified by scientific training and experience to evaluate the safety of food additives, are generally recognized as appropriate for the use of animal experimentation data were not evaluated. The lack of mammalian toxicity at high levels of exposure to the **Cry3Bb1** and Cry2Ab2 proteins demonstrate the safety of the product at levels well above possible maximum exposure levels anticipated in the crop.

The genetic material necessary for the production of the plant-pesticides active ingredients are the nucleic acids (DNA, RNA) which comprise genetic material encoding these proteins and their regulatory regions. ``Regulatory regions'' are the genetic material, such as promoters, terminators, and enhancers, that control the expression of the genetic material encoding the proteins. DNA and RNA are common to all forms of plant and animal life and the Agency knows of no instance where these nucleic acids have been associated with toxic effects related to their consumption as a component of food. These ubiquitous nucleic acids, as they appear in the subject active ingredient, have been adequately characterized by the applicant. Therefore, no mammalian toxicity is anticipated from dietary exposure to the genetic material necessary for the production of the subject active plant pesticidal ingredients.

B. Infants and Children Risk Conclusions

FFDCA section 408(b)(2)(C) provides that EPA shall assess the available information about consumption patterns among infants and children, special susceptibility of infants and children to pesticide chemical residues and the cumulative effects on infants and children of the residues and other substances with a common mechanism of toxicity. In addition, FFDCA section 408(B)(2)(C) also provides that EPA shall apply an additional tenfold margin of safety for infants and children in the case of threshold effects to account for prenatal and postnatal toxicity and the completeness of the data base unless EPA determines that a different margin of safety will be safe for infants and children.

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In this instance, based on all the available information, the Agency concludes that there is a finding of no toxicity for the **Cry3Bb1** and Cry2Ab2 proteins and the genetic material necessary for their production. Thus, there are no threshold effects of concern and, as a result, the provision requiring an additional margin of safety does not apply. Further, the provisions of consumption patterns, special susceptibility, and cumulative effects do not apply.

C. Overall Safety Conclusion

There is a reasonable certainty that no harm will result from aggregate exposure to the U.S. population, including infants and children, to the **Cry3Bb1** and Cry2Ab2 proteins and the genetic material necessary for their production. This includes all anticipated dietary exposures and all other exposures for which there is reliable information.

The Agency has arrived at this conclusion because, as discussed above, no toxicity to mammals has been observed for the plant-pesticides.

VIII. Other Considerations

A. Endocrine Disruptors

The pesticidal active ingredients are proteins, derived from sources that are not known to exert an influence on the endocrine system. Therefore, the Agency is not requiring information on the endocrine effects of these plant-pesticides at this time.

B. Analytical Method(s)

Validated methods for extraction and direct ELISA analysis of **Cry3Bb1** in corn grain, Cry2Ab2 in corn grain, and Cry2Ab2 in cotton seed have been submitted and found acceptable by the Agency.

C. Codex Maximum Residue Level

No Codex maximum residue levels exists for the plant-pesticidesBacillus thuringiensis **Cry3Bb1** protein and the genetic material necessary for its production in corn and Bacillus thuringiensis Cry2Ab2 protein and the genetic material necessary for its production in corn or cotton.

IX. Objections and Hearing Requests

Under section 408(g) of the FFDCA, as amended by the FQPA, any person may file an objection to any aspect of this regulation and may also request a hearing on those objections. The EPA procedural regulations that govern the submission of objections and requests for hearings appear in 40 CFR part 178. Although the procedures in those regulations require some modification to reflect the amendments made to the FFDCA by the FQPA of 1996, EPA will continue to use those procedures, with appropriate adjustments, until the necessary modifications can be made. The new section 408(g) provides essentially the same process for persons to ``object'' to a regulation for an exemption from the requirement of a tolerance issued by EPA under new section 408(d), as was provided in the old FFDCA sections 408 and 409.

[[Page 24065]]

However, the period for filing objections is now 60 days, rather than 30 days.

A. What Do I Need to Do to File an Objection or Request a Hearing?

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You must file your objection or request a hearing on this regulation in accordance with the instructions provided in this unit and in 40 CFR part 178. To ensure proper receipt by EPA, you must identify docket control number OPP-301123 in the subject line on the first page of your submission. All requests must be in writing, and must be mailed or delivered to the Hearing Clerk on or before July 10, 2001.

1. Filing the request. Your objection must specify the specific provisions in the regulation that you object to, and the grounds for the objections (40 CFR 178.25). If a hearing is requested, the objections must include a statement of the factual issues(s) on which a hearing is requested, the requestor's contentions on such issues, and a summary of any evidence relied upon by the objector (40 CFR 178.27). Information submitted in connection with an objection or hearing request may be claimed confidential by marking any part or all of that information as CBI. Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2. A copy of the information that does not contain CBI must be submitted for inclusion in the public record. Information not marked confidential may be disclosed publicly by EPA without prior notice.

Mail your written request to: Office of the Hearing Clerk (1900), Environmental Protection Agency, Ariel Rios Bldg., 1200 Pennsylvania Ave., NW., Washington, DC 20460. You may also deliver your request to the Office of the Hearing Clerk in Rm. C400, Waterside Mall, 401 M St., SW., Washington, DC 20460. The Office of the Hearing Clerk is open from 8 a.m. to 4 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Office of the Hearing Clerk is (202) 260-4865.

2. Tolerance fee payment. If you file an objection or request a hearing, you must also pay the fee prescribed by 40 CFR 180.33(i) or request a waiver of that fee pursuant to 40 CFR 180.33(m). You must mail the fee to: EPA Headquarters Accounting Operations Branch, Office of Pesticide Programs, P.O. Box 360277M, Pittsburgh, PA 15251. Please identify the fee submission by labeling it ``Tolerance Petition Fees.''

EPA is authorized to waive any fee requirement ``when in the judgement of the Administrator such a waiver or refund is equitable and not contrary to the purpose of this subsection.'' For additional information regarding the waiver of these fees, you may contact James Tompkins by phone at (703) 305-5697, by e-mail at tompkins.jim@epa.gov, or by mailing a request for information to Mr. Tompkins at Registration Division (7505C), Office of Pesticide Programs, Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460.

If you would like to request a waiver of the tolerance objection fees, you must mail your request for such a waiver to: James Hollins, Information Resources and Services Division (7502C), Office of Pesticide Programs, Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460.

3. Copies for the Docket. In addition to filing an objection or hearing request with the Hearing Clerk as described in Unit IX.A., you should also send a copy of your request to the PIRIB for its inclusion in the official record that is described in Unit I.B.2. Mail your copies, identified by docket number OPP-301123, to: Public Information and Records Integrity Branch, Information Resources and Services Division (7502C), Office of Pesticide Programs, Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460. In person or by courier, bring a copy to the location of the PIRIB described in Unit I.B.2. You may also send an electronic copy of your request via e-mail to: opp-docket@epa.gov. Please use an ASCII file format and avoid the use of special characters and any form of encryption. Copies of electronic objections and hearing requests will also be accepted on disks in WordPerfect 6.1/8.0 or ASCII file format. Do not include any CBI in your electronic copy. You may also submit an electronic copy of your request at many Federal Depository Libraries.

B. When Will the Agency Grant a Request for a Hearing?

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A request for a hearing will be granted if the Administrator determines that the material submitted shows the following: There is a genuine and substantial issue of fact; there is a reasonable possibility that available evidence identified by the requestor would, if established resolve one or more of such issues in favor of the requestor, taking into account uncontested claims or facts to the contrary; and resolution of the factual issues(s) in the manner sought by the requestor would be adequate to justify the action requested (40 CFR 178.32).

X. Regulatory Assessment Requirements

This final rule establishes a tolerance under FFDCA section 408(d) in response to a petition submitted to the Agency. The Office of Management and Budget (OMB) has exempted these types of actions from review under Executive Order 12866, entitled Regulatory Planning and Review (58 FR 51735, October 4, 1993). This final rule does not contain any information collections subject to OMB approval under the Paperwork Reduction Act (PRA), 44 U.S.C. 3501 et seq., or impose any enforceable duty or contain any unfunded mandate as described under Title II of the Unfunded Mandates Reform Act of 1995 (UMRA) (Public Law 104-4). Nor does it require any special considerations under Executive Order 12898, entitled Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (59 FR 7629, February 16, 1994); or OMB review or any Agency action under Executive Order 13045, entitled Protection of Children from Environmental Health Risks and Safety Risks (62 FR 19885, April 23, 1997). This action does not involve any technical standards that would require Agency consideration of voluntary consensus standards pursuant to section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law 104-113, section 12(d) (15 U.S.C. 272 note). Since tolerances and exemptions that are established on the basis of a petition under FFDCA section 408(d), such as the tolerance in this final rule, do not require the issuance of a proposed rule, the requirements of the Regulatory Flexibility Act (RFA) (5 U.S.C. 601 et seq.) do not apply. In addition, the Agency has determined that this action will not have a substantial direct effect on States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132, entitled Federalism(64 FR 43255, August 10, 1999). Executive Order 13132 requires EPA to develop an accountable process to ensure ``meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.'' ``Policies that have federalism implications'' is defined in the Executive Order to include regulations that have ``substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.'' This final rule directly regulates growers, food processors, food handlers and food

{[Page 24066]}

retailers, not States. This action does not alter the relationships or distribution of power and responsibilities established by Congress in the preemption provisions of FFDCA section 408(n)(4). For these same reasons, the Agency has determined that this rule does not have any ``tribal implications'' as described in Executive Order 13175, entitled Consultation and Coordination with Indian Tribal Governments (65 FR 67249, November 6, 2000). Executive Order 13175, requires EPA to develop an accountable process to ensure ``meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications.'' ``Policies that have tribal implications'' is defined in the Executive Order to include regulations that have ``substantial direct effects on one or more Indian tribes, on the

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relationship between the Federal government and the Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian tribes.'' This rule will not have substantial direct effects on tribal governments, on the relationship between the Federal government and Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian tribes, as specified in Executive Order 13175. Thus, Executive Order 13175 does not apply to this rule.

XI. Submission to Congress and the Comptroller General

The Congressional Review Act, 5 U.S.C. 801 et seq., as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of the United States prior to publication of the rule in the Federal Register. This final rule is not a major rule as defined by 5 U.S.C. 804(2).

List of Subjects

Environmental protection, Administrative practice and procedure, Agricultural commodities, Pesticides and pests, Reporting and recordkeeping requirements.

Dated: April 20, 2001

Anne E. Lindsay

Acting Director

Therefore, 40 CFR chapter I is amended as follows:

PART 180--[AMENDED]

1. The authority citation for part 180 continues to read as follows:

Authority: 21 U.S.C. 321(q), 346(a) and 371.

2. Section 180.1214 is added to subpart D to read as follows:

Sec. 180.1214 Bacillus thuringiensis **Cry3Bb1** protein and the genetic material necessary for its production in corn; exemption from the requirement of a tolerance.

Bacillus thuringiensis **Cry3Bb1** protein and the genetic material necessary for its production in corn are exempt from the requirement of a tolerance when used as plant-pesticides in the food and feed commodities of field corn, sweet corn and popcorn. Genetic material necessary for its production means the genetic material which comprise genetic material encoding the **Cry3Bb1** protein and its regulatory regions. Regulatory regions are the genetic material, such as promoters, terminators, and enhancers, that control the expression of the genetic material encoding the **Cry3Bb1** protein.This exemption from the requirement of a tolerance will expire on May 1, 2004.

3. Section 180.1215 is added to subpart D to read as follows:

Sec. 180.1215 Bacillus thuringiensis Cry2Ab2 protein and the genetic material necessary for its production in corn or cotton; exemption from the requirement of a tolerance.

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Bacillus thuringiensis Cry2Ab2 protein and the genetic material necessary for its production in corn or cotton are exempt from the requirement of a tolerance when used as plant-pesticides in the food and feed commodities of field corn, sweet corn, popcorn, cotton seed, cotton oil, cotton meal, cotton hay, cotton hulls, cotton forage, and cotton gin byproducts. Genetic material necessary for its production means the genetic material which comprise genetic material encoding the Cry2Ab2 protein and its regulatory regions. Regulatory regions are the genetic material, such as promoters, terminators, and enhancers, that control the expression of the genetic material encoding the Cry2Ab2 protein. This exemption from the requirement of a tolerance will expire on May 1, 2004.

[FR Doc. 01-11917 Filed 5-10-01; 8:45 am]
BILLING CODE 6560-50-S

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Dr. Russell P. Schneider, Ph.D.
Monsanto Company
Suite 1100
700 14th Street, N. W.
Washington, D.C. 20005

Dear Dr. Schneider:

Subject: Monsanto's Request to Amend the Registration for the Plant Pesticide **Bacillus thuringiensis variety kursatki** Cry1A(c) Proposed Modification to Insect Resistance Management Conditions of Bollgard Cotton Registration
EPA Reg. No. 524-478
Your amendment application of June 20, 2000

The amendment referred to above, requested an amended registration for the plant pesticide **Bacillus thuringiensis var. kurstaki** of the proposed modifications to Bollgard (Cry1Ac) cotton insect resistance management plan (EPA Reg. No. 524-478) for a nine month extension from **January 1, 2001 to September 1, 2001**, submitted in connection with registration under FIFRA Sec. 3(c)(7)(A) **IS ACCEPTABLE** since Monsanto has agreed (in Monsanto's letter dated July 5, 2000) to the following three refuge options: **95:5 external structured unsprayed refuge, 80:20 external sprayed refuge, and 95:5 embedded refuge.**

1. The Agency has completed its review of the data submitted with your application of June 20, 2000, and the Agency's recommendations to Monsanto (to which they have agreed) are as follows:

Option 1: 95:5 external structured unsprayed refuge

"Ensure that at least 5 acres of non-Bollgard cotton (refuge cotton) is planted for every 95 acres of Bollgard cotton. This refuge **MAY NOT** be treated with any insecticide labeled for the control of tobacco budworm, cotton bollworm, or pink bollworm. The size of the refuge must be at least 150 ft wide. The refuge must be managed (fertility, weed control and management of other pests) similarly to Bollgard cotton. The refuge must be planted within ½ linear mile from the edge of the Bollgard cotton field."

Option 2: 80:20 external sprayed refuge

"Ensure that at least 25 acres of non-Bollgard cotton are planted as a refuge for every 100 acres of Bollgard cotton. All cotton **MAY** be treated with insecticides (excluding foliar

CONCURRENCES								
SYMBOL	7511C							
SURNAME	A. Olson							
DATE	8/1/01							

EPA Form 1320-1A (1/90) *Printed on Recycled Paper* OFFICIAL FILE COPY

B.t.k. products) labeled for control of the tobacco budworm, cotton bollworm, or pink bollworm. Ensure that a refuge is maintained within 1 linear mile (preferably within ½ mile) from the edge of the Bollgard cotton."

Option 3: 95:5 embedded refuge

"Plant at least 5 acres of non-Bollgard cotton (refuge cotton) for every 95 acres of Bollgard cotton. Plant the refuge cotton embedded as a contiguous block within the Bollgard field. For very large fields, multiple blocks across the field may be used. For small or irregularly shaped fields, neighboring fields farmed by the same grower can be grouped into blocks to represent a larger field unit, provided the block exists within one mile squared of the Bollgard cotton and the block is at least 150 ft. wide. Within the larger field unit, one of the smaller fields planted to non-Bollgard cotton may be utilized as the embedded refuge. This refuge may be treated with any insecticide (excluding foliar *B.t.k.* products) labeled for the control of tobacco budworm, cotton bollworm, or pink bollworm whenever the entire field is treated. **The refuge MAY NOT be treated independently of the Bollgard field.**

For areas affected by pink bollworm only, the refuge cotton may be planted as single rows within the Bollgard field.

In cases where placement of the refuge within one mile of the Bollgard cotton would be in conflict with state seed production regulations, the grower must plant the refuge as close to the Bollgard cotton as allowed.

2. Submit and/or cite all data required for registration/reregistration of your product under FIFRA Sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data.

3. Submit five (5) copies of your final printed labeling (if affected by this amendment approval) before you release the product for shipment.

Sincerely,

Janet L. Andersen, Ph.D., Director
Biopesticides and Pollution Prevention
Division (7511C)

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SYMBOL								
SURNAME								
DATE								

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Dr. Russell P. Schneider, Ph.D.
Monsanto Company
Suite 1100
700 14th Street, N. W.
Washington, D.C. 20005

Dear Dr. Schneider:

Subject: Monsanto's Request to Amend the Registration for the Plant Pesticide **Bacillus thuringiensis variety kursatki** Cry1A(c) Proposed Modification to Insect Resistance Management Conditions of Bollgard Cotton Registration
EPA Reg. No. 524-478
Your amendment application of June 20, 2000

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1. The Agency has completed its review of the data submitted with your application of June 20, 2000, and the Agency's recommendations to Monsanto (to which they have agreed) are as follows:

Option 1: 95:5 external structured unsprayed refuge

"Ensure that at least 5 acres of non-Bollgard cotton (refuge cotton) is planted for every 95 acres of Bollgard cotton. This refuge **MAY NOT** be treated with any insecticide labeled for the control of tobacco budworm, cotton bollworm, or pink bollworm. The size of the refuge must be at least 150 ft wide. The refuge must be managed (fertility, weed control and management of other pests) similarly to Bollgard cotton. The refuge must be planted within ½ linear mile from the edge of the Bollgard cotton field."

Option 2: 80:20 external sprayed refuge

"Ensure that at least 25 acres of non-Bollgard cotton are planted as a refuge for every 100 acres of Bollgard cotton. All cotton **MAY** be treated with insecticides (excluding foliar

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CONCURRENCES								
SYMBOL	7511C							
SURNAME	Nelson							
DATE	07/17/01							

B.t.k. products) labeled for control of the tobacco budworm, cotton bollworm, or pink bollworm. Ensure that a refuge is maintained within 1 linear mile (preferably within ½ mile) from the edge of the Bollgard cotton."

Option 3: 95:5 embedded refuge

"Plant at least 5 acres of non-Bollgard cotton (refuge cotton) for every 95 acres of Bollgard cotton. Plant the refuge cotton embedded as a contiguous block within the Bollgard field. For very large fields, multiple blocks across the field may be used. For small or irregularly shaped fields, neighboring fields farmed by the same grower can be grouped into blocks to represent a larger field unit, provided the block exists within one mile squared of the Bollgard cotton and the block is at least 150 ft. wide. Within the larger field unit, one of the smaller fields planted to non-Bollgard cotton may be utilized as the embedded refuge. This refuge may be treated with any insecticide (excluding foliar *B.t.k.* products) labeled for the control of tobacco budworm, cotton bollworm, or pink bollworm whenever the entire field is treated. **The refuge MAY NOT be treated independently of the Bollgard field.**

For areas affected by pink bollworm only, the refuge cotton may be planted as single rows within the Bollgard field.

In cases where placement of the refuge within one mile of the Bollgard cotton would be in conflict with state seed production regulations, the grower must plant the refuge as close to the Bollgard cotton as allowed.

2. Submit and/or cite all data required for registration/reregistration of your product under FIFRA Sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data.

3. Submit five (5) copies of your final printed labeling (if affected by this amendment approval) before you release the product for shipment.

Sincerely,

Janet L. Andersen

Janet L. Andersen, Ph.D., Director
Biopesticides and Pollution Prevention
Division (7511C)

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CONCURRENCES							
SYMBOL							
SURNAME							
DATE							

FOR OFFICIAL USE ONLY

PR 4978

FILE SYMBOL: 524-UTI

REGISTRATION NO.:

CONFIDENTIAL STATEMENT OF FORMULA ENCLOSED

DATE SUBMITTED	SUBMITTED BY (✓)	
	APPLICANT	BASIC SUPPLIER
2-10-94	✓	

Do Not Write Comments, Formula, or Parts of Formula on This Envelope

NOTE

It shall be unlawful—for any person to use for his own advant[illegible] to reveal, other than to the Secretary, or officials or employees [illegible] United States Department of Agriculture or other Federal agenc[illegible] to the courts in response to a subpoena, or to physicians, and in [illegible] gencies to pharamacists and other qualified persons, for use [illegible] preparation of antidotes, in accordance with such directions [illegible] Secretary may prescribe, any information relative to formu[illegible] products acquired by authority of Section 4 of the "Federal Insec[illegible] Fungicide, and Rodenticide Act."

PR FORM 9-11
(JULY 1970)

USDA-ARS

Reg # 524-478

Page ___ is not included in this copy.

Pages 25 through 30 are not included in this copy.

The material not included contains the following type of information:

_____ Identity of product inert ingredients.

_____ Identity of product inert impurities.

_____ Description of the product manufacturing process.

_____ Description of quality control procedures.

_____ Identity of the source of product ingredients.

_____ Sales or other commercial/financial information.

_____ A draft product label.

✓ The product confidential statement of formula.

_____ Information about a pending registration action.

_____ FIFRA registration data.

_____ The document is a duplicate of page(s) _____.

_____ The document is not responsive to the request.

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.

Please read instructions on reverse before comple[illegible]orm. Form Approvec[illegible]MB No. 2070-0060. Approval Expires 2-28-95

EPA

United States
Environmental Protection Agency
Washington, DC 20460

☐ Registration
☐ Amendment
☒ Other

OPP Identifier Number

Application for Pesticide – Section I

1. Company/Product Number	2. EPA Product Manager	3. Proposed Classification
Monsanto Company/524-478	Phillip O. Hutton	☒ None ☐ Restricted
4. Company/Product (Name) Monsanto Company/*Bacillus thuringiensis* subsp. *kurstaki* Insect Control Protein	PM # 90	
5. Name and Address of Applicant *(Include ZIP Code)* Monsanto Company 600 13th St., N.W., Suite 660 Washington, DC 20005 ☐ Check if this is a new address	6. **Expedited Review.** In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name _____	

Section – II

☐ Amendment – Explain below.
☐ Resubmission in response to Agency letter dated
☐ Notification – Explain below.
☐ Final printed labels in response to Agency letter dated
☐ "Me Too" Application.
☒ Other – Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

Submission of Cry1Ac (*B.t.k.* HD-73 protein) Bioinformatics Reports, Comparing Cry1Ac sequence to proteins known to be toxic or associated with allergy or celiac disease, in support of the Bollgard cotton reregistration assessment

Section – III

1. Material This Product Will Be Packaged In:

Child-Resistant Packaging	Unit Packaging		Water Soluble Packaging		2. Type of Container
☐ Yes* ☐ No	☐ Yes ☐ No		☐ Yes ☐ No		☐ Metal ☐ Plastic ☐ Glass ☐ Paper ☐ Other *(Specify)* _____
***Certification must be submitted**	If "Yes" Unit Packaging wgt.	No. per Container	If "Yes" Package wgt.	No. per Container	

3. Location of Net Contents Information	4. Size(s) Retail Container	5. Location of Label Directions
☐ Label ☐ Container	Various	☐ On Label ☐ On Labeling accompanying product

6. Manner in Which Label is Affixed to Product ☐ Lithograph ☐ Paper glued ☐ Stenciled ☐ Other _____

Section – IV

1. Contact Point *(Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)*

Name	Title	Telephone No. *(Include Area Code)*
Russell P. Schneider, Ph.D.	Regulatory Affairs Director	(202) 383-2866

Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

2. Signature	3. Title	6. Date Application Received **(Stamped)**
[signature]	Regulatory Affairs Manager	
4. Typed Name Keith Reding, Ph.D. (636) 737-7559	5. Date May 22, 2001	31

EPA Form 8570-1 (Rev. 3-94) Previous editions are obsolete. White - EPA File Copy (original) Yellow - Applicant Copy

Form Approved OMB No. 2070-0060

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
401 M Street, S. W.
WASHINGTON, D.C. 20460

Paperwork Reduction Act Notice: The public reporting burden for this collection of information is estimated to average 1.25 hours per response for registration and 0.25 hours per response for reregistration and special review activities, including time for reading the instructions and completing the necessary forms. Send comments regarding burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden to Director, OPPE Information Management Division (2137), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington DC, 20460. Do not send the completed form to this address.

Certification with Respect to Citation of Data

Applicant's/Registratant's Name, Address, and Telephone Number:	EPA Registration Number / File Symbol:
Monsanto Company, 600 13th Street, N.W., Washington, DC 2005 (202) 383-2866	524-478
Active Ingredient(s) and/or representative test compound(s):	Date:
Bacillus thuringiensis subsp. *kurstaki* Insect Control Protein	May 22, 2001
General Use Pattern(s) (list all those claimed for this product using 40 CFR Part 158:	Product Name:
Terrestrial field crop	*Bacillus thuringiensis* subsp. *kurstaki* Insect Control Protein

NOTE: If your product is a 100% repackaging of another purchased EPA-registered product labeled for all the same uses on your label, you do not need to submit this form. You must submit the Formulator's Exemption Statement (EPA Form 8570-27).

☐ I am responding to a Data-Call-In Notice, and have included with this form a list of companies sent offers of compensation (the Data Matrix form should be used for this purpose).

Section I: METHOD OF DATA SUPPORT (Check one method only)

☐ I am using the cite-all method of support, and have included with this form a list of companies set offers of compensation (the Data Matrix Form should be used for this purpose).

☒ I am using the selective method of support (or cite-all option under the selective method), and have included with this form a completed list of data requirements (the Data Matrix form must be used).

Section II: GENERAL OFFER TO PAY

[Required if using the cite-all method or when using the cite-all option under the selective method to satisfy one or more data requirements]

☐ I hereby offer and agree to pay compensation, to other persons, with regard to the approval of this application, to the extent required by FIFRA.

Section III: CERTIFICATION

I certify that this application for registration, this form for reregistration, or this Data-Call-In response is supported by all data submitted or cited in the application for registration, the form for registration, or the Data-Call-In response. In addition, if the cite-all option or cite-all option under the selective method is indicated in Section 1, this application is supported by all data in the Agency's files that (1) concern the properties or effects of this product or an identical or substantially similar product, one or more of the ingredients in this product; and (2) is a type of data that would be required to be submitted under the data requirements in effect on the date of approval of this application if the application sought the initial registration of a product of identical or similar composition and uses.

☒ I certify that for each exclusive use study cited in support of this registration or reregistration, that I am the original data submitter or that I have obtained the written permission of the original data submitter to cite that study.

I certify that for each study cited in support of this registration or reregistration that is not an exclusive use study, either: (a) I am the original data submitter; (b) I have obtained the permission of the original data submitter to use the study in support of this application; (c) all periods of eligibility for compensation have expired for the study; (d) the study is in the public literature; (e) I have notified in writing the company that submitted the study and have offered (i) to pay compensation to the extent required by sections 3(c)(1)(F) and/or 3(c)(2)(B) of FIFRA; and (ii) to commence negotiations to determine the amount and terms of compensation, if any, to be paid for the use of the study.

I certify that in all instances where an offer of compensation is required, copies of all offers to pay compensation and evidence of their delivery in accordance with sections 3(c)(1)(F) and/or 3(c)(2)(B) of FIFRA are available and will be submitted to the Agency upon request. Should I fail to produce such evidence to the Agency upon request, I understand that the Agency may initiate action to deny, cancel or suspend the registration of my product in conformity with FIFRA.

I certify that the statements I have made on this form and all attachments to it are true, accurate, and complete. I acknowledge that any knowingly false of misleading statement may be punishable by fine or imprisonment of both under the applicable law.

Signature	Date	Typed or Printed Name and Title
	May 22, 2001	Keith Reding, Ph.D. Regulatory Affairs Manager

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EPA Form 8570-34 (9-97) Electronic and Paper Versions available. Submit only Paper version.

Form Approved OMB No. 2070-0060

EPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
401 M Street, S.W.
Washington, D.C. 20460

Paperwork Reduction Act Notice: The public reporting burden for this collection of information is estimated to average 0.25 hours per response for registration activities and 0.25 hours per response for reregistration and special review activities, including time for reading the instructions and completing the necessary forms. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden to: Director, OPPE Information Management Division (2137), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, DC 20460. Do not send the form to this address.

DATA MATRIX

Date: May 22, 2001	EPA Reg No./File Symbol: 524-478	Page 1 of 2
Applicant's/Registrant's Name & Address: Monsanto Company, 600 13th Street, N.W., Suite 660, Washington, D.C. 20005	Product: *Bacillus thuringiensis* subsp. *kurstaki* Insect Control Protein	
Ingredient: *Bacillus thuringiensis* subsp. *kurstaki* Insect Control Protein		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
	Volume 1. *Bacillus thuringiensis* subsp. *kurstaki* HD-73 insecticidal protein (B.t.k. HD-73 protein) shares no significant sequence similarity with proteins associated with allergy or celiac disease		Monsanto Company	OWN	
	Volume 2. Comparative alignment of full-length B.t.k. HD-73 protein to known protein allergens and toxins using the FASTa algorithm		Monsanto Company	OWN	
Signature			Name and Title Keith Redig, Ph.D. Regulatory Affairs Mgr.	Date May 22, 2001	

Form Approved OMB No. 2070-0060

EPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
401 M Street, S.W.
Washington, D.C. 20460

Paperwork Reduction Act Notice: The public reporting burden for this collection of information is estimated to average 0.25 hours per response for registration activities and 0.25 hours per response for reregistration and special review activities, including time for reading the instructions and completing the necessary forms. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden to: Director, OPPE Information Management Division (2137), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, DC 20460. Do not send the form to this address.

DATA MATRIX

Date: May 22, 2001

EPA Reg No./File Symbol 524-478

Applicant's/Registrant's Name & Address:
Monsanto Company, 600 13th Street, N.W., Suite 660, Washington, D.C. 20005

Product: *Bacillus thuringiensis* subsp. *kurstaki* Insect Control Protein

Ingredient: *Bacillus thuringiensis* subsp. *kurstaki* Insect Control Protein

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
[redacted]			Monsanto Company	OWN	
			Monsanto Company	OWN	

Signature	Name and Title	Date	
	Keith Reding, Ph.D. Regulatory Affairs Mgr.	May 22, 2001	

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Administrative Materials

MONSANTO

454155-00

700 CHESTERFIELD PKWY NORTH
CHESTERFIELD, MISSOURI 63198
http://www.monsanto.com

May 22, 2001

Office of Pesticide Programs
Document Processing Desk (H7504C)
U.S. Environmental Protection Agency
Room 226A, Crystal Mall #2
1921 Jefferson Davis Highway
Arlington, VA 22202

Attn.: Mr. Phil Hutton

Subject: Additional Data in Support of the Bollgard® Cotton Registration (EPA Reg. No. 524-478)

Dear Mr. Hutton,

In response to your letter of March 27, please find enclosed a report on the allergenicity assessment and a report on the toxicity assessment of the Cry1Ac protein in Bollgard cotton. In the 2000 Biopesticides Registration Action Document Preliminary Risks and Benefits Sections for *Bacillus thuringiensis* Plant Pesticides, page IIB3, EPA indicated that a study on the amino acid sequence homology compared to known toxins and allergens was needed to bring Bollgard cotton up to current data requirement standards. Although this data was included in our consultation with FDA before the commercial introduction of Bollgard cotton, we are submitting two reports on this subject at your request. The results of these bioinformatics analyses indicate that the Cry1Ac protein produced in Bollgard cotton is not similar to known allergens, toxins, or other pharmacologically active proteins relevant to nontarget organisms or human health.

The classifications of Confidential Business Information (CBI) defined by the Agency are:

Class A: information can be released to anyone, regardless of affiliation to a foreign or multinational pesticide producer

3/6

Class B: information can be released only to individuals that attest they are not employees or agents of a foreign or multinational pesticide producer, as per FIFRA Section 10(g)

Class C: information is considered Confidential Business Information and is protected indefinitely by provisions put forth by the EPA, as per FIFRA Section 10.

Using these definitions, please use the classifications identified for the submitted documents:

1. **Comparative alignment of full-length B.t.k. HD-73 protein to known protein allergens and toxins using the FASTa algorithm**

   Classification B - information is releasable to anyone who can sign a FIFRA Sec. 10(g) form *i.e.* are not employees or agents of a foreign or multinational pesticide producer.

2. ***Bacillus thuringiensis* subsp. *kurstaki* HD-73 insecticidal protein (B.t.k. HD-73 protein) shares no significant sequence similarity with proteins associated with allergy or celiac disease** 4

   Classification B - information is releasable to anyone who can sign a FIFRA Sec. 10(g) form *i.e.* are not employees or agents of a foreign or multinational pesticide producer.

If you should have any questions regarding these reports, please do not hesitate to contact Dr. Russell Schneider at (202) 383-2866 or me at (636) 737-7559.

Sincerely,

H. Keith Reding, Ph.D.
Regulatory Affairs Manager

cc: 94-041E/01-CT-053E
Dr. Russell Schneider, Monsanto
Mr. Willie Nelson, EPA

TRANSMITTAL DOCUMENT

SUBMITTED BY

Monsanto Company
700 Chesterfield Parkway North
St. Louis, Missouri 63198

REGULATORY ACTION IN SUPPORT OF WHICH THIS PACKAGE IS SUBMITTED

TRANSMITTAL DATE

May 22, 2001

SUBMITTED STUDY

94-041E/ 01-CT-053E

Done

LIST OF SUBMITTED DOCUMENTS

Volume 1. *Bacillus thuringiensis* subsp. *kurstaki* HD-73 insecticidal protein (B.t.k. HD-73 protein) shares no significant sequence similarity with proteins associated with allergy or celiac disease

MRID 45415501

Volume 2. Comparative alignment of full-length B.t.k. HD-73 protein to known protein allergens and toxins using the FASTa algorithm

MRID 45415502

Company Official	Keith Reding, Ph.D. Name	Signature
Company Name	Monsanto Company	
Company Contact	Russell Schneider, Ph.D. Name	202-383-2365 Phone

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MAY 3 1 2001

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs

MONSANTO COMPANY
700 CHESTERFIELD PARKWAY NORTH
ST LOUIS, MO 63198

Report of Analysis for Compliance with PR Notice 86-5

Thank you for your transmittal of 05/25/01. Our staff has completed a preliminary analysis of the material. The results are provided as follows:

Your submittal was found to be in full compliance with the standards for submission of data contained in PR Notice 86-5. A copy of your bibliography is enclosed, annotated with Master Record ID's (MRIDs) assigned to each document submitted. Please use these numbers in all future references to these documents. Thank you for your cooperation. If you have any questions concerning this data submission, please raise them with the cognizant Product Manager, to whom the data have been released.

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MONSANTO

454155-00

[illegible]

May 22, 2001

Office of Pesticide Programs
Document Processing Desk (H7504C)
U.S. Environmental Protection Agency
Room 226A, Crystal Mall #2
1921 Jefferson Davis Highway
Arlington, VA 22202

Attn.: Mr. Phil Hutton

Subject: Additional Data in Support of the Bollgard® Cotton Registration (EPA Reg. No. 524-478)

Dear Mr. Hutton,

In response to your letter of March 27, please find enclosed a report on the allergenicity assessment and a report on the toxicity assessment of the Cry1Ac protein in Bollgard cotton. In the 2000 Biopesticides Registration Action Document Preliminary Risks and Benefits Sections for *Bacillus thuringiensis* Plant Pesticides, page IIB3, EPA indicated that a study on the amino acid sequence homology compared to known toxins and allergens was needed to bring Bollgard cotton up to current data requirement standards. Although this data was included in our consultation with FDA before the commercial introduction of Bollgard cotton, we are submitting two reports on this subject at your request. The results of these bioinformatics analyses indicate that the Cry1Ac protein produced in Bollgard cotton is not similar to known allergens, toxins, or other pharmacologically active proteins relevant to nontarget organisms or human health.

The classifications of Confidential Business Information (CBI) defined by the Agency are:

Class A: information can be released to anyone, regardless of affiliation to a foreign or multinational pesticide producer

40

Class B: information can be released only to individuals that attest they are not employees or agents of a foreign or multinational pesticide producer, as per FIFRA Section 10(g)

Class C: information is considered Confidential Business Information and is protected indefinitely by provisions put forth by the EPA, as per FIFRA Section 10.

Using these definitions, please use the classifications identified for the submitted documents:

1. **Comparative alignment of full-length B.t.k. HD-73 protein to known protein allergens and toxins using the FASTa algorithm**

   Classification B - information is releasable to anyone who can sign a FIFRA Sec. 10(g) form *i.e.* are not employees or agents of a foreign or multinational pesticide producer.

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If you should have any questions regarding these reports, please do not hesitate to contact Dr. Russell Schneider at (202) 383-2866 or me at (636) 737-7559.

Sincerely,

H. Keith Reding, Ph.D.
Regulatory Affairs Manager

cc: 94-041E/01-CT-053E
Dr. Russell Schneider, Monsanto
Mr. Willie Nelson, EPA

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TRANSMITTAL DOCUMENT

SUBMITTED BY

Monsanto Company
700 Chesterfield Parkway North
St. Louis, Missouri 63198

REGULATORY ACTION IN SUPPORT OF WHICH THIS PACKAGE IS SUBMITTED

TRANSMITTAL DATE

May 22, 2001

SUBMITTED STUDY

94-041E/ 01-CT-053E

LIST OF SUBMITTED DOCUMENTS

Volume 1. *Bacillus thuringiensis* subsp. *kurstaki* HD-73 insecticidal protein (B.t.k. HD-73 protein) shares no significant sequence similarity with proteins associated with allergy or celiac disease

MRID 45415501

Volume 2. Comparative alignment of full-length B.t.k. HD-73 protein to known protein allergens and toxins using the FASTa algorithm

MRID 45415502

Company Official	Keith Reding, Ph.D.	
	Name	Signature
Company Name	Monsanto Company	
Company Contact	Russell Schneider, Ph.D.	202-383-2363
	Name	Phone

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BPPD PRAT ACTION CODING FORM

PM 90: Janet Andersen

REVIEWER: NELSON
(ASSIGNED BY: POE)

EPA REG./FILE SYMBOL 524-478

ACTION CODE 330

(NEW a.i./EUPs/Tolerances: Yes ____/No____)

SUBMISSION BARCODE ____

DATE ON APPLICATION 6/9/00

EPA RECEIVED DATE 5/25/00

PM RECEIVED DATE 6/12/00

ASSIGNED IN PRAT: YES____ NO____

COMPLETED BY: ____ DATE: ____

Amendment
WILLIE - THIS GETS SPECIAL HANDLING.
- See me.

Phil

FINAL ACTION

Response Code ____

Response Date: ____

MOS: ____ (1) Cite-All

____ (4) Not Applicable

____ (8) Selective

CRP: Yes____ No____

Restricted Use: Yes____ No____

Manufacturing Use: Yes____ No____

Exclusive Use: Yes____ No____

MONSANTO

Food · Health · Hope

MONSANTO COMPANY
700 CHESTERFIELD PARKWAY NORTH
ST. LOUIS, MISSOURI 63198
PHONE (314) 694-1000
http://www.monsanto.com

Willie needs mail
Phil

April 10, 2001

Office of Pesticide Programs
Biopesticide and Pollution Prevention Division
US Environmental Protection Agency
Room 266A, Crystal Mall #2
1921 Jefferson Davis Highway
Arlington, VA 22202

Attn: Mr. Willie Nelson

Subject: Report on grower compliance with the Bollgard® insect resistance management plan for the 2000 growing season

Dear Mr. Nelson:

Please find enclosed the results of an on-farm survey of grower compliance with the Bollgard cotton insect resistance management (IRM) plan for the 2000 growing season. Monsanto has conducted the on-farm survey program during each of the last 5 years to determine the level of compliance. Consistent with the previous four years, grower compliance was very high in 2000 with 95% of the growers complying with the refuge requirements. This result indicates that growers understand the IRM requirements for Bollgard cotton and are implementing the plan as required.

If you have any questions, please contact Dr. Russ Schneider at 202-383-2866 or myself at 636-737-7559.

Sincerely,

Keith Reding, Ph.D.
Regulatory Affairs Manager
H.Keith.Reding@monsanto.com

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TRANSMITTAL DOCUMENT

SUBMITTED BY

Monsanto Company
700 Chesterfield Parkway North
St. Louis, Missouri 63198

REGULATORY ACTION IN SUPPORT OF WHICH THIS PACKAGE IS SUBMITTED

2000 Bollgard® Cotton On-Farm Grower
Compliance Survey Report (EPA Reg. No. 524-478)

TRANSMITTAL DATE

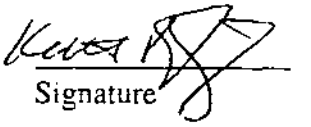
April 10, 2001

SUBMITTED STUDY

94-041E/01-CT-046E

LIST OF SUBMITTED DOCUMENTS

Volume 1. 2000 Bollgard Cotton On-Farm Grower Compliance Survey Report

Company Official	Keith Reding, Ph.D. Name	 Signature
Company Name	Monsanto Company	
Company Contact	Russell Schneider, Ph.D. Name	202-383-2866 Phone

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Summary Title

2000 Bollgard Cotton On-Farm Grower Compliance Survey Report

Data Requirement

None

Author

H. Keith Reding, Ph.D.

Registrant Submitting Date

April 10, 2001

Registrant Submitting

Monsanto Company
700 Chesterfield Village Pkwy N
St. Louis, MO 63198

Submission ID

94-041E/01-CT-046E

Volume 1 of 1

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STATEMENT OF NO DATA CONFIDENTIALITY CLAIMS

No claim of confidentiality is made for information in this application on the basis of falling within the scope of FIFRA 10 (d)(1)(A), (B), or (C).

"We submit this material to the United States Environmental Protection Agency specifically under the requirements set forth in FIFRA as amended, and consent to the use and disclosure of this material by EPA strictly in accordance with FIFRA. By submitting this material to EPA in accordance with the method and format requirements contained in PR Notice 86-5, we reserve and do not waive any rights involving this material that are or can be claimed by the company nothwithstanding this submission to EPA."

COMPANY: MONSANTO

COMPANY AGENT: _____

H. Keith Reding, Ph.D.
Regulatory Affairs Manager

DATE: April 10, 2001

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GLP COMPLIANCE STATEMENT

The enclosed report is not subject to the principles of 40 CFR 160, GOOD LABORATORY PRACTICE STANDARDS (FIFRA/FFDCA), as promulgated in Federal Register, 54, No. 158, 34067-34704, 1 July, 1991.

Submitter

April 10, 2001
Date

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2000 Bollgard Cotton On-Farm Grower Compliance Survey Report

During the 2000 cotton growing season, Monsanto completed a on-farm survey of 545 growers, approximately 5% of all Bollgard licensed growers, for compliance with the requirements of the insect resistance management plan. Of these growers, 516 (95% +/- 2% at a 95% confidence interval) were determined to be in compliance with the requirements. Twenty-nine growers were determined not to be in compliance for the reasons listed in Table 1.

Appendix 1 contains the Bollgard 2000 Resistance Management Plan Survey form which was used by the Monsanto representatives to conduct the on-farm survey.

Table 1. Explanation given for non-compliance.

Explanation	**Number of growers**
No refuge, no explanation	5
Planting mistake, mixed seed	2
Less than required acres/used neighbors cotton as refuge	6
Environmental (drought, flood, etc)	7
Did not know requirements	5
Treated the 4% refuge	2
Lack of seed availability	2
Total	29

Appendix 1. Bollgard 2000 Resistance Management Plan Survey

Survey Date: _____

License number(s): _____

Representative:_____

FARM

National Resources Conservation Society Farm Numbers:

_____

PEOPLE

License Name: _____ Farm Name: _____

Address:_____City: _____County: _____State: ___Zip: _____

Phone: _____ Sales Territory: _____

Contact Name: First _____ Last: _____

Street: _____

City: _____ State: _____

Zip:_____

Phone: _____

SUMMARY TRANSACTION INFORMATION

Sum of Bags: _____ Sum of Acres: _____

Exception Seed Drop Rate (SDR): _____ Ultra Narrow Row SDR:_____

REFUGE

Total Cotton (including Bollgard and refuge) Acres: _____

Total Bollgard Acres: _____

Total 4/100 Refuge Acres: _____Distance from closest Bollgard field: adjacent .25 mile .5 mile 1 mile > 1 mile

Total 25/100 Refuge Acres: _____Distance from closest Bollgard field: adjacent .25 mile .5 mile 1 mile > 1 mile

Total Assays Used: _____

Circle the years the grower has previously grown Bollgard or Bollgard/RR Stacked

1996 1997 1998 1999

CHECKLIST

❑ Appropriate Refuge in place ❑ Appropriate refuge **NOT** in place*

*Comments required to explain

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❑ Refuge lost-environmental ❑ No refuge planted ❑ Not enough refuge acres ❑ Trying to use neighbor's refuge

❑ Spraying 4/100 for Leps ❑ Did not know requirements ❑ Uncooperative ❑ Agronomic abuse of refuge

❑ Other

COMMENTS

BPPD PPAT ACTION CODING FORM

Monsanto
PM 90: Janet Andersen

REVIEWER: Nelson
(ASSIGNED BY: Phil)

EPA REG./FILE SYMBOL 524-478

Request To Amend.

ACTION CODE 375

(NEW a.i./EUPs/Tolerances: Yes ____/No____)

SUBMISSION BARCODE ____

DATE ON APPLICATION 2/9/01

EPA RECEIVED DATE 2/20/01

PM RECEIVED DATE 2/22/01

ASSIGNED IN PRAT: YES ____ NO X

COMPLETED BY: T. Bethea DATE: 3/20/01

FINAL ACTION

Response Code ____

Response Date: ____

MOS: ____ (1) Cite-All

____ (4) Not Applicable

____ (8) Selective

CRP: Yes____ No____

Restricted Use: Yes____ No____

Manufacturing Use: Yes____ No____

Exclusive Use: Yes____ No____

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MONSANTO

MONSANTO COMPANY
700 CHESTERFIELD PKWY NORTH
CHESTERFIELD, MISSOURI 63198
http://www.monsanto.com

February 19, 2001

U.S. Environmental Protection Agency
Office of Pesticide Programs
Biopesticide and Pollution Prevention Division
1921 Jefferson Davis Highway
Arlington, VA 22202

To: Janet Andersen, Ph.D., Director

Subject: Request to Amend the Registration Terms and Conditions for Bollgard® Cotton (EPA Reg. No. 524-478) for Implementation of a Pilot Community Refuge Program for 2001

Dear Dr. Andersen:

On January 23, 2001, Monsanto submitted a request to amend the registration conditions for Bollgard cotton (EPA Reg. No. 524-478) to allow a pilot community refuge program for 2001, which allows groups of growers to implement either the 5% unsprayed and/or 20% sprayed refuge options. In a letter dated February 12, 2001, EPA agreed, in principal, with the Monsanto proposed community refuge program and requested several additional conditions. Monsanto agrees to the conditions outlined in the February 12 letter and requests that EPA approve the terms and conditions of the registration listed in Attachment 1.

Please contact me at (636) 737-7559 or Dr. Russell Schneider at (202) 386-2866 if you have any questions regarding this registration amendment request.

Sincerely,

Keith Reding, Ph.D.
Monsanto, Regulatory Affairs Manager

cc: Mr. Phil Hutton; Dr. Sharlene Matten

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Attachment 1. Proposed Bollgard cotton refuge terms and conditions for the 2001 growing season.

Growers must choose one of three structural refuge options for the 2001 growing season:

1. 95:5 external structured unsprayed refuge
Ensure that at least 5 acres of non-Bollgard cotton (refuge cotton) is planted for every 95 acres of Bollgard cotton. This refuge may not be treated with any insecticide labeled for the control of tobacco budworm, cotton bollworm, or pink bollworm. The size of the refuge must be at least 150 ft wide. The refuge cotton must be managed (fertility, weed control and management of other pests) similar to Bollgard cotton. The refuge must be planted within 1/2 linear mile from the edge of the Bollgard cotton field.

2. 80:20 sprayed refuge
Ensure that at least 25 acres of non-Bollgard cotton is planted as a refuge for every 100 acres of Bollgard cotton. All cotton may be treated with insecticides (excluding foliar *B.t.k.* products) labeled for control of the tobacco budworm, cotton bollworm, or pink bollworm. Ensure that a refuge is maintained within 1 linear mile (preferably within ½ mile) from the edge of the Bollgard cotton.

3. 95:5 embedded refuge
Plant at least 5 acres of non-Bollgard cotton (refuge cotton) for every 95 acres of Bollgard cotton. Plant the refuge cotton embedded as a contiguous block within the Bollgard cotton field. For very large fields, multiple blocks across the field may be used. For small or irregularly shaped fields, neighboring fields farmed by the same grower can be grouped into blocks to represent a larger field unit, provided the block exists within one mile squared of the Bollgard cotton and the block is at least 150 ft wide. Within this larger field unit, one of the smaller fields planted to non-Bollgard cotton may be utilized as the embedded refuge. This refuge may be treated with any insecticide, excluding foliar *B.t.k.* products, labeled for the control of tobacco budworm, cotton bollworm, or pink bollworm whenever the entire field is treated. The refuge may not be treated independently of the Bollgard field.

For areas affected by pink bollworm only, the refuge cotton may be planted as single rows within the Bollgard field.

In cases where placement of the refuge within one mile of the Bollgard cotton would be in conflict with state seed production regulations, the grower must plant the refuge as close to the Bollgard cotton as allowed.

4. A community refuge program will be allowed as a pilot for the 2001 growing season. The community refuge for insect resistance management must meet the requirements of either the 5% unsprayed option (#1) and/or the 20% sprayed option (#2), or an appropriate combination of the two options. The 5% embedded option (#3) is not allowed to be part of the community refuge program. Monsanto must implement the

2001 community refuge pilot program as described in the Bollgard® cotton Refuge Guide and Errata and perform the following actions.

a. Require each community refuge coordinator to submit a signed community refuge form and copy of the field map with refuge distances (to scale) or suitable scalar representation of the community refuge to Monsanto by May 15, 2001; provide EPA with a copy of the signed form and a copy of the field map (to scale) or suitable scalar representation of the community refuge;
b. Conduct two phone audits of all community refuge coordinators;
c. Include the community refuge program users in the on-farm audit program by Monsanto and invite EPA to accompany Monsanto on some of these visits;
c. Provide a written report to EPA at the end of the 2001 growing season on community refuge compliance; and
e. Conduct a review of the program by Monsanto, National Cotton Council (NCC), and EPA after the 2001 growing season.

Please read instructions on reverse before com, ng form. Form Appro. OMB No. 2070-0060. Approval Expires 2-28-95

EPA

United States
Environmental Protection Agency
Washington, DC 20460

☐ **Registration**
☒ **Amendment**
☐ **Other**

OPP Identifier Number

Application for Pesticide - Section I

1. Company/Product Number	2. EPA Product Manager	3. Proposed Classification
Monsanto Company/524-478	Phillip O. Hutton	☒ None ☐ Restricted
4. Company/Product (Name)	PM #	
Monsanto Company/ Bollgard® cotton	90	

5. Name and Address of Applicant *(Include ZIP Code)*
Monsanto Company
600 13th St., N.W., Suite 660
Washington, DC 20005
☐ Check if this is a new address

6. **Expedited Review.** In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to:
EPA Reg. No. _____
Product Name _____

Section – II

☒ Amendment - Explain below.
☐ Resubmission in response to Agency letter dated _____
☐ Notification - Explain below.
☐ Final printed labels in response to Agency letter dated _____
☐ "Me Too" Application.
☐ Other – Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

Registration amendment request for conditions to implement the community refuge pilot program for 2001

Section – III

1. Material This Product Will Be Packaged In:

Child-Resistant Packaging	Unit Packaging		Water Soluble Packaging		2. Type of Container
☐ Yes* ☐ No	☐ Yes ☐ No		☐ Yes ☐ No		☐ Metal ☐ Plastic ☐ Glass ☐ Paper ☐ Other *(Specify)*
* ***Certification must be submitted***	If "Yes" Unit Packaging wgt.	No. per Container	If "Yes" Package wgt.	No. per Container	

3. Location of Net Contents Information	4. Size(s) Retail Container	5. Location of Label Directions
☐ Label ☐ Container		☐ On Label ☐ On Labeling accompanying product

6. Manner in Which Label is Affixed to Product ☐ Lithograph ☐ Paper glued ☐ Stenciled ☐ Other _____

Section – IV

1. Contact Point *(Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)*

Name	Title	Telephone No. *(Include Area Code)*
Russell P. Schneider, Ph.D.	Regulatory Affairs Director	(202) 383-2866

Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

6. Date Application Received **(Stamped)**

2. Signature	3. Title
[signature]	Regulatory Affairs Manager
4. Typed Name	5. Date
Keith Reding, Ph.D. (636) 737-7559	February 19, 2001

EPA Form 8570-1 (Rev. 3-94) Previous editions are obsolete. White - EPA File Copy (original) Yellow - Applicant Copy

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MONSANTO

MONSANTO COMPANY
700 CHESTERFIELD PKWY NORTH
CHESTERFIELD, MISSOURI 63198
http://www.monsanto.com

30 January, 2001

Office of Pesticide Programs
Biopesticide and Pollution Prevention Division
US Environmental Protection Agency
Room 266A, Crystal Mall #2
1921 Jefferson Davis Highway
Arlington, VA 22202

Attn: Mr. Willie Nelson

Subject: Submission of the 2000 Bollgard® cotton acreage by county and request for extension on the resistance monitoring reports (EPA Reg. No. 524-478)

Dear Mr. Nelson:

As per the conditions of our October 31, 1995 registration (EPA Registration Number 524-478), Monsanto is required to report annually by January 31 the Bollgard cotton acreage by county and a report on resistance monitoring.

The 2000 Bollgard cotton acreage report is enclosed.

We request an extension until April 30, 2001 to submit the final report on resistance monitoring because these reports have not yet been finalized by our research cooperators, Dr. Hardee at USDA in Stoneville, MS and Dr. Dennehy at the University of Arizona. Preliminary reports from these researchers indicate no change has accrued in susceptibility to Cry1Ac to field populations of *Helicoverpa zea*, *Heliothis veriscens*, or *Pectinophora gossypiella* compared to control laboratory populations.

If you have any questions, please contact Dr. Russ Schneider at 202-383-2866 or myself at 636-737-7559.

Sincerely,

Keith Reding

Keith Reding, Ph.D.
Regulatory Affairs Manager
H.Keith.Reding@monsanto.com

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TRANSMITTAL DOCUMENT

SUBMITTED BY

Monsanto Company
700 Chesterfield Parkway North
St. Louis, Missouri 63198

REGULATORY ACTION IN SUPPORT OF WHICH THIS PACKAGE IS SUBMITTED

2000 Annual Bollgard Cotton Acreage Reporting Requirements for 524-478

TRANSMITTAL DATE

January 30, 2001

SUBMITTED STUDY

94-041E/00-CT-034E

LIST OF SUBMITTED DOCUMENTS

Volume 1. 2000 Bollgard Cotton Acreage Report

COMPANY: MONSANTO

COMPANY AGENT: _____

H. Keith Reding, Ph.D.
Regulatory Affairs Manager

DATE: January 30, 2001

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Summary Title

2000 Bollgard Cotton Acreage Report

Data Requirement

2000 Annual Bollgard Cotton Acreage Report as a Requirement of Conditional Registration 524-478

Author

H. Keith Reding, Ph.D.

Registrant Submitting Date

January 30, 2001

Registrant Submitting

Monsanto Company
700 Chesterfield Village Pkwy N
St. Louis, MO 63198

Submission ID
94-041-E/00-CT-034E

Volume 1 of 1

59

Reg # 524-478
Vol 3 of 3

Page ___ is not included in this copy.

Pages 60 through 74 are not included in this copy.

The material not included contains the following type of information:

_____ Identity of product inert ingredients.

_____ Identity of product inert impurities.

_____ Description of the product manufacturing process.

_____ Description of quality control procedures.

_____ Identity of the source of product ingredients.

_____ Sales or other commercial/financial information.

_____ A draft product label.

_____ The product confidential statement of formula.

_____ Information about a pending registration action.

✓ FIFRA registration data.

_____ The document is a duplicate of page(s) _____.

_____ The document is not responsive to the request.

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.

DP BARCODE: D278728

CASE: 040886 DATA PACKAGE RECORD DATE: 10/24/01
SUBMISSION: S593197 BEAN SHEET Page 1 of 1

* * * CASE/SUBMISSION INFORMATION * * *

CASE TYPE: REGISTRATION ACTION: 400 DATA-MISC DATA-NOT REQUES
CHEMICALS: 006445 Bacillus thuringiensis var. kurstaki delta endotox %

ID#: 000524-00478 BACILLUS THURINGIENSIS VAR KURSTAKI INSECT CONTROL
COMPANY: 000524 MONSANTO COMPANY
PRODUCT MANAGER: 90 JANET ANDERSEN 703-308-8128 ROOM: CS1 5TH FL
PM TEAM REVIEWER: WILLIE NELSON 703-308-8682 ROOM: CS1 5TH FL
RECEIVED DATE: 02/02/01 DUE OUT DATE: 06/02/01

* * * DATA PACKAGE INFORMATION * * *

DP BARCODE: 278728 EXPEDITE: Y DATE SENT: 10/24/01 DATE RET.: / /
CHEMICAL: 006445 Bacillus thuringiensis var. kurstaki delta endotoxin protei
DP TYPE: 001
CSF: Y LABEL: Y

ASSIGNED TO	DATE IN	DATE OUT	ADMIN DUE DATE: 02/11/02
DIV : BPPD	/ /	/ /	NEGOT DATE: / /
BRAN: BPPD-IO	/ /	/ /	PROJ DATE: / /
SECT: IO	/ /	/ /	
REVR :	/ /	/ /	
CONTR:	/ /	/ /	

* * * DATA REVIEW INSTRUCTIONS * * *

John, et al - Please review this submission updating data/information for Monsanto's Bollgard Cotton Registration. specifically as the Bollgard relates to cotton event 757:
1. Additional molecular characterization of Bollgard cotton event 757, MSL-16930, November 21, 2000. 2. "Analysis of CryAc polypeptides in cottonseed from Bollgard otton event 757", MSL-16970, November 21, 2000; and 3. Updated Molecular Characterization and Safety Assessment of Bollgard Cotton Event 757', MSL-16990, November 22, 2000.

* * * DATA PACKAGE EVALUATION * * *

No evaluation is written for this data package

* * * ADDITIONAL DATA PACKAGES FOR THIS SUBMISSION * * *

DP BC	BRANCH/SECTION	DATE OUT	DUE BACK	INS	CSF	LABEL

95

DP BARCODE: D278728

CASE: 040886 DATA PACKAGE RECORD DATE: 10/24/01
SUBMISSION: S593197 BEAN SHEET Page 1 of 1

* * * CASE/SUBMISSION INFORMATION * * *

CASE TYPE: REGISTRATION ACTION: 400 DATA-MISC DATA-NOT REQUES
CHEMICALS: 006445 Bacillus thuringiensis var. kurstaki delta endotox %

ID#: 000524-00478 BACILLUS THURINGIENSIS VAR KURSTAKI INSECT CONTROL
COMPANY: 000524 MONSANTO COMPANY
PRODUCT MANAGER: 90 JANET ANDERSEN 703-308-8128 ROOM: CS1 5TH FL
PM TEAM REVIEWER: WILLIE NELSON 703-308-8682 ROOM: CS1 5TH FL
RECEIVED DATE: 02/02/01 DUE OUT DATE: 06/02/01

* * * DATA PACKAGE INFORMATION * * *

DP BARCODE: 278728 EXPEDITE: Y DATE SENT: 10/24/01 DATE RET.: / /
CHEMICAL: 006445 Bacillus thuringiensis var. kurstaki delta endotoxin protei
DP TYPE: 001
CSF: Y LABEL: Y

ASSIGNED TO	DATE IN	DATE OUT
DIV : BPPD	/ /	/ /
BRAN: BPPD-IO	/ /	/ /
SECT: IO	/ /	/ /
REVR :	/ /	/ /
CONTR:	/ /	/ /

ADMIN DUE DATE: 02/11/02
NEGOT DATE: / /
PROJ DATE: / /

* * * DATA REVIEW INSTRUCTIONS * * *

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1. Additional molecular characterization of Bollgard cotton event 757, MSL-16930, November 21, 2000. 2. "Analysis of CryAc polypeptides in cottonseed from Bollgard otton event 757", MSL-16970, November 21, 2000; and 3. Updated Molecular Characterization and Safety Assessment of Bollgard Cotton Event 757', MSL-16990, November 22, 2000.

* * * DATA PACKAGE EVALUATION * * *

No evaluation is written for this data package

* * * ADDITIONAL DATA PACKAGES FOR THIS SUBMISSION * * *

DP BC	BRANCH/SECTION	DATE OUT	DUE BACK	INS	CSF	LABEL

DP BARCODE: D278728

CASE: 040886 DATA PACKAGE RECORD DATE: 10/24/01
SUBMISSION: S593197 BEAN SHEET Page 1 of 1

* * * CASE/SUBMISSION INFORMATION * * *

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DP BARCODE: 278728 EXPEDITE: Y DATE SENT: 10/24/01 DATE RET.: / /
CHEMICAL: 006445 Bacillus thuringiensis var. kurstaki delta endotoxin protei
DP TYPE: 001
CSF: Y LABEL: Y

ASSIGNED TO	DATE IN	DATE OUT
DIV : BPPD	/ /	/ /
BRAN: BPPD-IO	/ /	/ /
SECT: IO	/ /	/ /
REVR :	/ /	/ /
CONTR:	/ /	/ /

ADMIN DUE DATE: 02/11/02
NEGOT DATE: / /
PROJ DATE: / /

* * * DATA REVIEW INSTRUCTIONS * * *

John, et al - Please review this submission updating data/information for Monsanto's Bollgard Cotton Registration. specifically as the Bollgard relates to cotton event 757:
1. Additional molecular characterization of Bollgard cotton event 757, MSL-16930, November 21, 2000. 2. "Analysis of CryAc polypeptides in cottonseed from Bollgard otton event 757", MSL-16970, November 21, 2000; and 3. Updated Molecular Characterization and Safety Assessment of Bollgard Cotton Event 757', MSL-16990, November 22, 2000.

* * * DATA PACKAGE EVALUATION * * *

No evaluation is written for this data package

* * * ADDITIONAL DATA PACKAGES FOR THIS SUBMISSION * * *

DP BC	BRANCH/SECTION	DATE OUT	DUE BACK	INS	CSF	LABEL

77

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MONSANTO COMPANY
600 13TH STREET, N.W.
SUITE 660
WASHINGTON, D.C. 20005
TEL: (202) 783-2460
FAX: (202) 783-2468

December 6, 2000

Janet Andersen, Ph.D.
Office of Pesticide Programs
Biopesticide and Pollution Prevention Division
Room 226A, Crystal Mall #2
1921 Jefferson Davis Highway
Arlington, VA 22202

Re: Bollgard® Cotton Event 757, EPA Registration Number 524-478

Dear Dr. Andersen:

The enclosed documents are being provided to the U.S. Environmental Protection Agency to update the file for EPA Registration Number 524-478, *Bacillus thuringiensis* var. *kurstaki* insect control protein as expressed in cotton cells, specifically as the registration relates to Bollgard cotton event 757:

1. "Additional molecular characterization of Bollgard® cotton event 757", MSL-16930, November 21, 2000;
2. "Analysis of Cry1Ac polypeptides in cottonseed from Bollgard® cotton event 757", MSL-16970, November 21, 2000; and
3. "Updated Molecular Characterization and Safety Assessment of Bollgard® Cotton Event 757", MSL-16990, November 22, 2000.

On February 15, 1994, Monsanto submitted a petition to the EPA requesting the registration and exemption from a tolerance for the plant pesticide *Bacillus thuringiensis* var. *kurstaki* (*B.t.k.*) insect control protein Cry1Ac, as expressed in Bollgard cotton event 531. On December 20, 1994, Monsanto submitted a petition requesting approval of the same insect control protein as expressed in Bollgard cotton events 757 and 1076. On October 31, 1995, the EPA granted a conditional registration for the commercial production of Bollgard cotton.

The purpose of this communication is to provide the EPA with updated molecular characterization information specifically for Bollgard cotton event 757. A detailed description

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of the genetic material introduced into Bollgard cotton event 757 was included in the petition submitted to the EPA on December 20, 1994. The title of the study is "Molecular characterization of insect resistant cotton lines expressing full length B.t.k. HD-73 protein," MRID 43505601. Based on Southern blot analysis, western blot analysis and ELISA, it was concluded that Bollgard cotton event 757 contained two insertions of DNA from the plasmid PV-GHBK04. The primary, functional T-DNA insert consists of a nearly complete copy of the transformation plasmid that includes one functional *cry1Ac* gene cassette: an e35S promoter, the *cry1Ac* coding sequence, and a 7S 3' transcription terminator.. Expression of this gene cassette results in the production of the expected full-length Cry1Ac protein that protects the cotton plant against Lepidopteran insect pests. The second T-DNA insert consists of a section of the 3' coding region of the *cry1Ac* gene fused to a 7S 3' transcription terminator. The 3' end of the *cry1Ac* coding sequence is not fused to a promoter and does not encode for insecticidal activity since it does not include the insecticidally active 5' portion of the gene. Southern blot analyses suggested that the two T-DNA inserts were separated by plant DNA. A schematic representation of the 757 inserts was provided on page 29 of the molecular characterization study report.

Monsanto has subsequently extended the molecular characterization of cotton event 757 using more sensitive and precise methods including Southern blot analysis, PCR, genome walking, DNA sequencing, RT-PCR and western blot analysis. Based on the results of these additional molecular characterization studies, the 757 event has been further defined to reveal the presence of 256 base pairs of the e35S promoter fused with the first 1111 base pairs of the *cry1Ac* coding region. This additional sequence is located between, and is contiguous with, the previously characterized two T-DNA inserts. Therefore, results using more sensitive and precise methods show the presence of three segments of T-DNA from plasmid PV-GBHK04 at a single point of insertion in the genome of Bollgard cotton event 757. The linkage between the genetic elements at the point of insertion was confirmed using Southern blot and PCR analyses. A schematic representation of the revised cotton event 757 insert can be found on page 27 of the enclosed molecular characterization report.

Based on the arrangement of these genetic elements, an RT-PCR analysis was conducted to test for the presence of a transcript from the partial *5' cry1Ac* coding sequence. A product from the RT-PCR was detected, suggesting that an mRNA transcript is produced. However, western blot analysis using polyclonal antisera to the full-length Cry1Ac protein showed that no detectable protein is produced from the fragment above the limit of detection (0.36 µg/g of seed) and confirms that only the full-length Cry1Ac protein and proteolytic fragments are produced in Bollgard cotton event 757.

Using Southern blot analysis, PCR, genome walking and DNA sequence analysis, we have determined that the newly detected T-DNA segment, consisting of a partial e35S promoter and the fragment of the *5' cry1Ac* coding sequence, was a constituent of Bollgard cotton event 757 throughout the comprehensive food, feed and environmental safety studies performed on this product.

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Based on these factors, Monsanto has reviewed its safety assessment of Bollgard cotton event 757 and concluded that the recent characterization using more sensitive and precise methods does not alter the initial conclusion that Bollgard cotton event 757 is as safe as conventional cotton for use in food and animal feed and does not pose a risk to the environment.

Monsanto requests that the enclosed information be inserted as an addendum to file for EPA Registration Number 524-478 for Bollgard cotton event 757. If you have any questions regarding this information please contact me or Dr. Russ Schneider.

Sincerely,

Andrew J. Reed

Andrew J. Reed, Ph.D.
Regulatory Affairs Manager

Enclosures (3)

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Study Title

Additional Molecular Characterization of Bollgard® Cotton Event 757

Authors

Sean C. Doherty
Jeanna R. Hillyard
Steven E. Reiser
Donald W. Mittanck
Ronald P. Lirette

Report Completed

November 21, 2000

Performing Laboratory

Monsanto Company
Product Characterization Center
Biotechnology Regulatory Sciences
700 Chesterfield Parkway North
St. Louis, MO 63198

Laboratory Project ID

Study 00-01-36-23
MSL-16930

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Reg # 524-478
Vol 3 of 3

Page ___ is not included in this copy.

Pages 82 through 147 are not included in this copy.

The material not included contains the following type of information:

_____ Identity of product inert ingredients.

_____ Identity of product inert impurities.

_____ Description of the product manufacturing process.

_____ Description of quality control procedures.

_____ Identity of the source of product ingredients.

_____ Sales or other commercial/financial information.

_____ A draft product label.

_____ The product confidential statement of formula.

_____ Information about a pending registration action.

✓ FIFRA registration data.

_____ The document is a duplicate of page(s) _____.

_____ The document is not responsive to the request.

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.

454951-00

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MONSANTO COMPANY
600 13TH STREET, N.W.
SUITE 660
WASHINGTON, D.C. 20005
TEL: (202) 783-2460
FAX: (202) 783-2468

September 10, 2001

Document Processing Desk (APPL)
Office of Pesticide Programs (7504C)
U.S. Environmental Protection Agency
Room 226A, Crystal Mall #2
1921 Jefferson Davis Highway
Arlington, VA 22202-4501

Attn: Phillip O. Hutton, PM 90

Re: Bollgard® Cotton Event 531, EPA Registration Number 524-478

Dear Mr. Hutton:

Per our meeting on July 2, 2001, the enclosed documents are being provided to the U.S. Environmental Protection Agency to update the file for EPA Registration Number 524-478, *Bacillus thuringiensis* var. *kurstaki* insect control protein as expressed in cotton cells, specifically as the registration relates to Bollgard cotton event 531.

As discussed during our meeting, Monsanto has recently extended the molecular characterization of Bollgard cotton event 531 using more sensitive and precise methods than were available at the time of the original molecular characterizations. A summary of this information, entitled "Executive Summary: Updated Molecular Characterization and Safety Assessment of Bollgard® Cotton Event 531," was submitted to the U.S. Environmental Protection Agency on July 11, 2001. Please find enclosed three copies of the following additional reports and information for Bollgard cotton event 531.

Volume 1:
This volume contains a study entitled "Extended Molecular Characterization of Bollgard Cotton Event 531," Monsanto Technical Report: MSL-16882. Attached to this study is a supplement entitled "Updated Molecular Characterization and Safety Assessment of Bollgard® Cotton Event 531." Monsanto Technical Report: MSL-17380. This report summarizes the extended molecular information and discusses the information within the context of the established food, feed and environmental safety of Bollgard cotton event 531.

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Volume 2:
This volume contains a study entitled "RT-PCR Analysis of the DNA Sequences Flanking the 3' Portion of the *cry1Ac* Coding Region and the Partial 7S 3' Genetic Element in Bollgard Cotton Event 531," Monsanto Technical Report: MSL-17098. Attached to this study is a supplement entitled "Messenger RNA Analysis of the DNA Sequences Flanking the 3' Portion of the *cry1Ac* Coding Region and 7S 3' Genetic Element in Bollgard® Cotton Event 531: A Safety Assessment," Monsanto Technical Report: MSL-17381. This report summarizes results of the RT-PCR analyses of the DNA flanking sequences and discusses the information within the context of the established food, feed and environmental safety of Bollgard cotton event 531.

Monsanto requests that the enclosed information be inserted as an addendum to the file for EPA Registration Number 524-478. If you have any questions regarding this information, please contact me at (636) 737-6661 or Dr. Russ Schneider at (202) 383-2866.

Sincerely,

Andrew J. Reed

Andrew J. Reed, Ph.D.
Regulatory Affairs Manager

Enclosures

cc: Dr. Russell Schneider
94-041E

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TRANSMITTAL DOCUMENT

SUBMITTED BY

Monsanto Company
600 13th Street N.W.
Suite 660
Washington, DC 20005

REGULATORY ACTION IN SUPPORT OF WHICH THIS PACKAGE IS SUBMITTED

Submission of additional molecular characterization data for Bollgard®[1] cotton event 531; EPA registration number 524-478.

TRANSMITTAL DATE

September 10, 2001

LIST OF SUBMITTED DOCUMENTS

Volume 1. Reiser, S.E., Beazley, K.A., Petersen, E.A., Hillyard, J.R., Cavato, T.A. and Lirette, R.P. Extended Molecular Characterization of Bollgard Cotton Event 531. MSL-16882; an unpublished study conducted by Monsanto Company.

MRID Number 45495101

[1] Bollgard® is a registered trademark of Monsanto Technology LLC.

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LIST OF SUBMITTED DOCUMENTS CONTINUED:

Volume 2. Beazley, K.A., Reiser, S.E., Cavato, T.A. and Lirette, R.P. RT-PCR Analysis of the DNA Sequences Flanking the 3' Portion of the *cry1Ac* Coding Region and the Partial 7S 3' Genetic Element in Bollgard Cotton Event 531. MSL-17098; an unpublished study conducted by Monsanto Company.

MRID Number 45495102

Company Official: Andrew J. Reed Sept 10, 2001

Andrew J. Reed, Ph.D. Date
Regulatory Affairs Manager

Company Name: Monsanto Company

Company Contact: Russell P. Schneider, Ph.D.; (202) 383-2866

Please read instructions on reverse before pleting form. Form A ved. OMB No. 2070-0060. Approval Expires 2-28-95

EPA

United States
Environmental Protection Agency
Washington, DC 20460

☐ Registration
☐ Amendment
☒ Other

OPP Identifier Number

Application for Pesticide – Section I

1. Company/Product Number	2. EPA Product Manager	3. Proposed Classification
Monsanto / EPA Registration 524-478	Phillip O. Hutton	☒ None ☐ Restricted
4. Company/Product (Name)	PM #	
Monsanto / Bollgard cotton event 531	90	

5. Name and Address of Applicant *(Include ZIP Code)*
Monsanto Company
600 13th St., N.W., Suite 660
Washington, DC 20005
☐ Check if this is a new address

6. **Expedited Review.** In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to:
EPA Reg. No. _____
Product Name _____

Section – II

☐ Amendment – Explain below.
☐ Resubmission in response to Agency letter dated
☐ Notification – Explain below.
☐ Final printed labels in response to Agency letter dated
☐ "Me Too" Application.
☒ Other – Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

Submission of additional molecular characterization data in support of Bollgard cotton event 531; EPA registration number 524-478.

Section – III

1. Material This Product Will Be Packaged In:

Child-Resistant Packaging	Unit Packaging	Water Soluble Packaging	2. Type of Container
☐ Yes* ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Metal ☐ Plastic ☐ Glass ☐ Paper ☒ Other *(Specify)* _____
***Certification must be submitted**	If "Yes" Unit Packaging wgt. / No. per Container	If "Yes" Package wgt. / No. per Container	

3. Location of Net Contents Information	4. Size(s) Retail Container	5. Location of Label Directions
☐ Label ☐ Container	Various	☐ On Label ☐ On Labeling accompanying product

6. Manner in Which Label is Affixed to Product ☐ Lithograph ☐ Paper glued ☐ Stenciled ☒ Other _____

Section – IV

1. Contact Point *(Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)*

Name	Title	Telephone No. *(Include Area Code)*
Russell P. Schneider, Ph.D.	Regulatory Affairs Director	(202) 383-2866

Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

2. Signature	3. Title	6. Date Application Received (Stamped)
Andrew J. Reed	Regulatory Affairs Manager	152
4. Typed Name: Andrew J. Reed, Ph.D. (636) 737-6661	5. Date: September 10, 2001	

Form Approved OMB No. 2070-0060

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
401 M Street, S. W.
WASHINGTON, D.C. 20460

Paperwork Reduction Act Notice: The public reporting burden for this collection of information is estimated to average 1.25 hours per response for registration and 0.25 hours per response for reregistration and special review activities, including time for reading the instructions and completing the necessary forms, Send comments regarding burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden to Director, OPPE Information Management Division (2137), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington DC, 20460. Do not send the completed form to this address.

Certification with Respect to Citation of Data

Applicant's/Registrant's Name, Address, and Telephone Number:	EPA Registration Number / File Symbol:
Monsanto Company 600 13th Street, N.W., Washington, DC 2005 (202)383-2866	524-478
Active Ingredient(s) and/or representative test compound(s):	Date:
Cry1Ac protein as produced in Bollgard cotton event 531	September 10, 2001
General Use Pattern(s) (list all those claimed for this product using 40 CFR Part 158:	Product Name) : Bollgard cotton event 531
Terrestrial field crop	

NOTE: If your product is a 100% repackaging of another purchased EPA-registered product labeled for all the same uses on your label, you do not need to submit this form. You must submit the Formulator's Exemption Statement (EPA Form 8570-27).

☐ I am responding to a Data-Call-in Notice, and have included with this form a list of companies sent offers of compensation (the Data Matrix form should be used for this purpose).

Section I: METHOD OF DATA SUPPORT (Check one method only)

☐ I am using the cite-all method of support, and have included with this form a list of companies set offers of compensation (the Data Matrix Form should be used for this purpose).

☒ I am using the selective method of support (or cite-all option under the selective method), and have included with this form a completed list of data requirements (the Data Matrix form must be used).

Section II: GENERAL OFFER TO PAY

[Required if using the cite-all method or when using the cite-all option under the selective method to satisfy one or more data requirements]

☐ I hereby offer and agree to pay compensation, to other persons, with regard to the approval of this application, to the extent required by FIFRA.

Section III: CERTIFICATION

I certify that this application for registration, this form for reregistration, or this Data-Call-In response is supported by all data submitted or cited in the application for registration, the form for registration, or the Data-Call-In response. In addition, if the cite-all option or cite-all option under the selective method is indicated in Section 1, this application is supported by all data in the Agency's files that (1) concern the properties or effects of this product or an identical or substantially similar product, one or more of the ingredients in this product; and (2) is a type of data that would be required to be submitted under the data requirements in effect on the date of approval of this application if the application sought the initial registration of a product of identical or similar composition and uses.

☒ I certify that for each exclusive use study cited in support of this registration or reregistration, that I am the original data submitter or that I have obtained the written permission of the original data submitter to cite that study.

I certify that for each study cited in support of this registration or reregistration that is not an exclusive use study, either: (a) I am the original data submitter; (b) I have obtained the permission of the original data submitter to use the study in support of this application; (c) all periods of eligibility for compensation have expired for the study; (d) the study is in the public literature; (e) I have notified in writing the company that submitted the study and have offered (i) to pay compensation to the extent required by sections 3(c)(1)(F) and/or 3(c)(2)(B) of FIFRA; and (ii) to commence negotiations to determine the amount and terms of compensation, if any, to be paid for the use of the study.

I certify that in all instances where an offer of compensation is required, copies of all offers to pay compensation and evidence of their delivery in accordance with sections 3(c)(1)(F) and/or 3(c)(2)(B) of FIFRA are available and will be submitted to the Agency upon request. Should I fail to produce such evidence to the Agency upon request, I understand that the Agency may initiate action to deny, cancel or suspend the registration of my product in conformity with FIFRA.

I certify that the statements I have made on this form and all attachments to it are true, accurate, and complete. I acknowledge that any knowingly false of misleading statement may be punishable by fine or imprisonment of both under the applicable law.

Signature	Date	Typed or Printed Name and Title
Andrew J. Reed	September 10, 2001	Andrew J. Reed, Ph.D., Regulatory Affairs Manager

EPA Form 8570-34 (9-97) Electronic and Paper Versions available. Submit only Paper version.

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Form Approved OMB No. 2070-0060

EPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
401 M Street, S.W.
Washington, D.C. 20460

Paperwork Reduction Act Notice: The public reporting burden for this collection of information is estimated to average 0.25 hours per response for registration activities and 0.25 hours per response for reregistration and special review activities, including time for reading the instructions and completing the necessary forms. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden to: Director, OPPE Information Management Division (2137), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, DC 20460. Do not send the form to this address.

DATA MATRIX

Date: September 10, 2001	EPA Reg No./File Symbol: 524-478	Page 1 of 1
Applicant's/Registrant's Name & Address: Monsanto Company, 600 13th Street, N.W. - Suite 660, Washington, D.C. 20005	Product: Bollgard cotton event 531	
Ingredient: Cry1Ac protein as produced in Bollgard cotton event 531		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
	Volume 1 - Extended Molecular Characterization of Bollgard Cotton Event 531. MSL-16882		Monsanto Company	Own	
	Volume 2 - RT-PCR Analysis of the DNA Sequences Flanking the 3' Portion of the *cry1Ac* Coding Region and the Partial 7S 3' Genetic Element in Bollgard Cotton Event 531. MSL-17098		Monsanto Company	Own	

Signature	Name and Title	Date	
Andrew J. Reed	Andrew J. Reed, Ph.D., Regulatory Affairs Mgr.	September 10, 2001	

EPA Form 8570-35 (9-97) Electronic and Paper versions available. Submit only Paper version.

Agency Internal Use Copy

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Form Approved OMB No. 2070-0060

EPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
401 M Street, S.W.
Washington, D.C. 20460

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DATA MATRIX

Date: September 10, 2001	EPA Reg No./File Symbol: 524-478	Page 1 of 1
Applicant's/Registrant's Name & Address: Monsanto Company, 600 13th Street, N.W. - Suite 660, Washington, D.C. 20005	Product: Bollgard cotton event 531	
Ingredient: Cry1Ac protein as produced in Bollgard cotton event 531		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
[redacted]			Monsanto Company	Own	
			Monsanto Company	Own	
Signature: Andrew J. Reed			Name and Title: Andrew J. Reed, Ph.D. Regulatory Affairs Mgr.	Date: September 10, 2001	

EPA Form 8570-35 (9-97) Electronic and Paper versions available. Submit only Paper version.

Public File Copy

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Please read instructions on reverse before pleting form. Form Ap ed. OMB No. 2070-0060. Approval Expires 2-28-95

EPA

United States
Environmental Protection Agency
Washington, DC 20460

☐ Registration
☐ Amendment
☒ Other

OPP Identifier Number

Application for Pesticide – Section I

1. Company/Product Number	2. EPA Product Manager	3. Proposed Classification
Monsanto / EPA Registration 524-478	Phillip O. Hutton	☒ None ☐ Restricted
4. Company/Product (Name)	PM #	
Monsanto / Bollgard cotton event 531	90	

5. Name and Address of Applicant *(Include ZIP Code)*
Monsanto Company
600 13th St., N.W., Suite 660
Washington, DC 20005
☐ Check if this is a new address

6. **Expedited Review.** In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to:
EPA Reg. No. _____
Product Name _____

Section – II

☐ Amendment – Explain below.
☐ Resubmission in response to Agency letter dated
☐ Notification – Explain below.
☐ Final printed labels in response to Agency letter dated
☐ "Me Too" Application.
☒ Other – Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

Submission of additional molecular characterization data in support of Bollgard cotton event 531; EPA registration number 524-478.

Section – III

1. Material This Product Will Be Packaged In:

Child-Resistant Packaging	Unit Packaging		Water Soluble Packaging		2. Type of Container
☐ Yes* ☒ No	☐ Yes ☒ No		☐ Yes ☒ No		☐ Metal ☐ Plastic ☐ Glass ☐ Paper ☒ Other *(Specify)* _____
***Certification must be submitted**	If "Yes" Unit Packaging wgt.	No. per Container	If "Yes" Package wgt.	No. per Container	

3. Location of Net Contents Information	4. Size(s) Retail Container	5. Location of Label Directions
☐ Label ☐ Container	Various	☐ On Label ☐ On Labeling accompanying product

6. Manner in Which Label is Affixed to Product ☐ Lithograph ☐ Paper glued ☐ Stenciled ☒ Other _____

Section – IV

1. Contact Point *(Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)*

Name	Title	Telephone No. *(Include Area Code)*
Russell P. Schneider, Ph.D.	Regulatory Affairs Director	(202) 383-2866

Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

2. Signature	3. Title	6. Date Application Received (Stamped)
Andrew J. Reed	Regulatory Affairs Manager	156
4. Typed Name: Andrew J. Reed, Ph.D. (636) 737-6661	5. Date: September 10, 2001	

Form Approved OMB No. 2070-0060

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
401 M Street, S. W.
WASHINGTON, D.C. 20460

Paperwork Reduction Act Notice: The public reporting burden for this collection of information is estimated to average 1.25 hours per response for registration and 0.25 hours per response for reregistration and special review activities, including time for reading the instructions and completing the necessary forms, Send comments regarding burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden to Director, OPPE Information Management Division (2137), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington DC, 20460. Do not send the completed form to this address.

Certification with Respect to Citation of Data

Applicant's/Registrant's Name, Address, and Telephone Number:	EPA Registration Number / File Symbol:
Monsanto Company 600 13th Street, N.W., Washington, DC 2005 (202)383-2866	524-478
Active Ingredient(s) and/or representative test compound(s):	Date:
Cry1Ac protein as produced in Bollgard cotton event 531	September 10, 2001
General Use Pattern(s) (list all those claimed for this product using 40 CFR Part 158:	Product Name) : Bollgard cotton event 531
Terrestrial field crop	

NOTE: If your product is a 100% repackaging of another purchased EPA-registered product labeled for all the same uses on your label, you do not need to submit this form. You must submit the Formulator's Exemption Statement (EPA Form 8570-27).

☐ I am responding to a Data-Call-In Notice, and have included with this form a list of companies sent offers of compensation (the Data Matrix form should be used for this purpose).

Section I: METHOD OF DATA SUPPORT (Check one method only)

☐ I am using the cite-all method of support, and have included with this form a list of companies set offers of compensation (the Data Matrix Form should be used for this purpose).

☒ I am using the selective method of support (or cite-all option under the selective method), and have included with this form a completed list of data requirements (the Data Matrix form must be used).

Section II: GENERAL OFFER TO PAY

[Required if using the cite-all method or when using the cite-all option under the selective method to satisfy one or more data requirements]

☐ I hereby offer and agree to pay compensation, to other persons, with reqard to the approval of this application, to the extent required by FIFRA.

Section III: CERTIFICATION

I certify that this application for registration, this form for reregistration, or this Data-Call-In response is supported by all data submitted or cited in the application for registration, the form for registration, or the Data-Call-In response. In addition, if the cite-all option or cite-all option under the selective method is indicated in Section 1, this application is supported by all data in the Agency's files that (1) concern the properties or effects of this product or an identical or substantially similar product, one or more of the ingredients in this product; and (2) is a type of data that would be required to be submitted under the data requirements in effect on the date of approval of this application if the application sought the initial registration of a product of identical or similar composition and uses.

☒ I certify that for each exclusive use study cited in support of this registration or reregistration, that I am the original data submitter or that I have obtained the written permission of the original data submitter to cite that study.

I certify that for each study cited in support of this registration or reregistration that is not an exclusive use study, either: (a) I am the original data submitter; (b) I have obtained the permission of the original data submitter to use the study in support of this application; (c) all periods of eligibility for compensation have expired for the study; (d) the study is in the public literature; (e) I have notified in writing the company that submitted the study and have offered (i) to pay compensation to the extent required by sections 3(c)(1)(F) and/or 3(c)(2)(B) of FIFRA; and (ii) to commence negotiations to determine the amount and terms of compensation, if any, to be paid for the use of the study.

I certify that in all instances where an offer of compensation is required, copies of all offers to pay compensation and evidence of their delivery in accordance with sections 3(c)(1)(F) and/or 3(c)(2)(B) of FIFRA are available and will be submitted to the Agency upon request. Should I fail to produce such evidence to the Agency upon request, I understand that the Agency may initiate action to deny, cancel or suspend the registration of my product in conformity with FIFRA.

I certify that the statements I have made on this form and all attachments to it are true, accurate, and complete. I acknowledge that any knowingly false of misleading statement may be punishable by fine or imprisonment of both under the applicable law.

Signature	Date	Typed or Printed Name and Title
Andrew J. Reed	September 10, 2001	Andrew J. Reed, Ph.D. , Regulatory Affairs Manager

EPA Form 8570-34 (9-97) Electronic and Paper Versions available. Submit only Paper version.

159

Form Approved OMB No. 2070-0060

EPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
401 M Street, S.W.
Washington, D.C. 20460

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DATA MATRIX

Date: September 10, 2001	EPA Reg No./File Symbol: 524-478	Page 1 of 1
Applicant's/Registrant's Name & Address: Monsanto Company, 600 13th Street, N.W. - Suite 660, Washington, D.C. 20005	Product: Bollgard cotton event 531	
Ingredient: Cry1Ac protein as produced in Bollgard cotton event 531		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
	Volume 1 - Extended Molecular Characterization of Bollgard Cotton Event 531. MSL-16882		Monsanto Company	Own	
	Volume 2 - RT-PCR Analysis of the DNA Sequences Flanking the 3' Portion of the *cry1Ac* Coding Region and the Partial 7S 3' Genetic Element in Bollgard Cotton Event 531. MSL-17098		Monsanto Company	Own	

Signature	Name and Title	Date	
Andrew J. Reed	Andrew J. Reed, Ph.D., Regulatory Affairs Mgr.	September 10, 2001	

EPA Form 8570-35 (9-97) Electronic and Paper versions available. Submit only Paper version.

Agency Internal Use Copy

Form Approved OMB No. 2070-0060

EPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
401 M Street, S.W.
Washington, D.C. 20460

Paperwork Reduction Act Notice: The public reporting burden for this collection of information is estimated to average 0.25 hours per response for registration activities and 0.25 hours per response for reregistration and special review activities, including time for reading the instructions and completing the necessary forms. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden to: Director, OPPE Information Management Division (2137), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, DC 20460. Do not send the form to this address.

DATA MATRIX

Date: September 10, 2001	EPA Reg No./File Symbol: 524-478	Page 1 of 1
Applicant's/Registrant's Name & Address: Monsanto Company, 600 13th Street, N.W. - Suite 660, Washington, D.C. 20005	Product: Bollgard cotton event 531	
Ingredient: Cry1Ac protein as produced in Bollgard cotton event 531		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
[redacted]			Monsanto Company	Own	
			Monsanto Company	Own	

Signature	Name and Title	Date	
Andrew J. Reed	Andrew J. Reed, Ph.D. Regulatory Affairs Mgr.	September 10, 2001	

EPA Form 8570-35 (9-97) Electronic and Paper versions available. Submit only Paper version.

Public File Copy

57

MONSANTO

Food · Health · Hope

MONSANTO COMPANY
700 CHESTERFIELD PARKWAY NORTH
ST. LOUIS, MISSOURI 63198
PHONE (314) 694-1000
http://www.monsanto.com

November 22, 1999

Office of Pesticide Programs - H7505C
Biopesticide and Pollution Prevention Division
U.S. Environmental Protection Agency
Document Processing Desk
Room 266A, Crystal Mall #2
1921 Jefferson Davis Highway
Arlington, VA 22202

Attn: Mr. Willie Nelson

Subject: *Bacillus thuringiensis* subsp. *kurstaki* insect control protein, as produced by the Bollgard® gene in cotton, EPA Reg. No. 524-478. Submission of 1998 Growing Season Sales and Research Progress Report.

Dear Mr. Nelson,

Please find enclosed the summary of Bollgard cotton acreage for 1998 summarized by state. This information is provided as confidential business information with the understanding that it will not be released in any form or compilation that would allow Monsanto's sales data to be deduced from such release.

If there are any questions with regard to this submission, please call Dr. Russ Schneider at (202) 383-2866 or call me directly at (636) 737-6870.

Sincerely,

Karen S. Gustafson
Regulatory Affairs Manager

cc: Dr. Russ Schneider
94-041E Files

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Reg # 524-478
Vol 3 of 3

Page ___ is not included in this copy.

Pages 161 through 162 are not included in this copy.

The material not included contains the following type of information:

_____ Identity of product inert ingredients.

_____ Identity of product inert impurities.

_____ Description of the product manufacturing process.

_____ Description of quality control procedures.

_____ Identity of the source of product ingredients.

✓ Sales or other commercial/financial information.

_____ A draft product label.

_____ The product confidential statement of formula.

_____ Information about a pending registration action.

_____ FIFRA registration data.

_____ The document is a duplicate of page(s) _____.

_____ The document is not responsive to the request.

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.

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Sincerely,

Karen S. Gustafson
Regulatory Affairs Manager

cc: Dr. Russ Schneider
94-041E Files

163

1

Reg # 524-478 Vol. 3 of 3

Page ___ is not included in this copy.

Pages 164 through 165 are not included in this copy.

The material not included contains the following type of information:

_____ Identity of product inert ingredients.

_____ Identity of product inert impurities.

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_____ Description of quality control procedures.

_____ Identity of the source of product ingredients.

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_____ The product confidential statement of formula.

_____ Information about a pending registration action.

__√__ FIFRA registration data.

_____ The document is a duplicate of page(s) _____.

_____ The document is not responsive to the request.

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DP BARCODE: D271378

CASE: 040886 DATA PACKAGE RECORD DATE: 12/21/0C
SUBMISSION: S589324 BEAN SHEET Page 1 of 1

* * * CASE/SUBMISSION INFORMATION * * *

CASE TYPE: REGISTRATION ACTION: 570 CON REG FLW-UP DAT REQ RD
CHEMICALS: 006445 Bacillus thuringiensis var. kurstaki delta endotox %

ID#: 000524-00478 BACILLUS THURINGIENSIS VAR KURSTAKI INSECT CONTROL
COMPANY: 000524 MONSANTO AGRICULTURAL CO
PRODUCT MANAGER: 90 JANET ANDERSEN 703-308-8128 ROOM: CS1 5TH FL
PM TEAM REVIEWER: WILLIE NELSON 703-308-8682 ROOM: CS1 5TH FL
RECEIVED DATE: 11/20/00 DUE OUT DATE: 03/10/01

* * * DATA PACKAGE INFORMATION * * *

DP BARCODE: 271378 EXPEDITE: Y DATE SENT: 12/21/00 DATE RET.: / /
CHEMICAL: 006445 Bacillus thuringiensis var. kurstaki delta endotoxin protei
DP TYPE: 001
CSF: N LABEL: N

ASSIGNED TO	DATE IN	DATE OUT
DIV : BPPD	/ /	/ /
BRAN: BPPD-IO	/ /	/ /
SECT: IO	/ /	/ /
REVR :	/ /	/ /
CONTR:	/ /	/ /

ADMIN DUE DATE: 03/01/01
NEGOT DATE: / /
PROJ DATE: / /

* * * DATA REVIEW INSTRUCTIONS * * *

Sharlene - this is Monsanto,s Product Production Information for Bollgard Cotton submitted in accordance with condition #2 of the registration for Bollgard Cotton for fiscal year beginning October 1, 1999 and ending September 30, 2000. Please review this information for FIFRA compliance. WILLIE

* * * DATA PACKAGE EVALUATION * * *

No evaluation is written for this data package

* * * ADDITIONAL DATA PACKAGES FOR THIS SUBMISSION * * *

DP BC	BRANCH/SECTION	DATE OUT	DUE BACK	INS	CSF	LABEL

1606

BPPD PRAT ACTION COPING FORM

PM 90: Janet Andersen

REVIEWER: NELSON
(ASSIGNED BY: PM)

EPA REG./FILE SYMBOL 524-478

ACTION CODE 570

(NEW a.i./EUPs/Tolerances: Yes ____/No____)

SUBMISSION BARCODE 589324

DATE ON APPLICATION 11|14|00

EPA RECEIVED DATE 11|20|00

PM RECEIVED DATE 11|29|00

ASSIGNED IN PRAT: YES X NO ____

COMPLETED BY: T. Bethea DATE: 12/11/00

FINAL ACTION

Response Code _____

Response Date: _____

MOS: _____ (1) Cite-All

_____ (4) Not Applicable

_____ (8) Selective

CRP: Yes____ No____

Restricted Use: Yes____ No____

Manufacturing Use: Yes____ No____

Exclusive Use: Yes____ No____

167

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700 CHESTERFIELD PARKWAY NORTH
ST. LOUIS, MISSOURI 63198
PHONE (314) 694-1000
http://www.monsanto.com

November 14, 2000

Office of Pesticide Programs - H7504C
Document Processing Desk
U.S. Environmental Protection Agency
Room 266A, Crystal Mall #2
1921 Jefferson Davis Highway
Arlington, VA 22202

Attn.: Mr. Phil Hutton, Production Manager #90

Subject: Production information for Bollgard® Cotton,
EPA Registration Number 524-478

Dear Mr. Hutton:

In accordance with condition 2 of the registration for Bollgard® cotton, we are submitting this production report for the fiscal year beginning 1 October, 1999 and ending 30 September 2000.

The total production in the U.S. during this time period is **[CBI DELETED]** pounds of seed.

If there are any questions with regard to this submission, please call Dr. Russ Schneider at (202) 383-2866, or cal me directly at (636) 737-7618.

Sincerely,

J. Austin Burns
Regulatory Affairs Specialist, Cotton

cc: Dr. Russ Schneider
94-041E Files

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CONFIDENTIAL ATTACHMENT

169

Reg # 524-478
Vol 3 of 3

Page ___ is not included in this copy.

Pages 170 through 171 are not included in this copy.

The material not included contains the following type of information:

_____ Identity of product inert ingredients.

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_____ Description of quality control procedures.

_____ Identity of the source of product ingredients.

__✓__ Sales or other commercial/financial information.

_____ A draft product label.

_____ The product confidential statement of formula.

_____ Information about a pending registration action.

_____ FIFRA registration data.

_____ The document is a duplicate of page(s) _____.

_____ The document is not responsive to the request.

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.

Reg # 524-478
Vol 3 of 3

Page ___ is not included in this copy.

Pages 174 through 195 are not included in this copy.

The material not included contains the following type of information:

_____ Identity of product inert ingredients.

_____ Identity of product inert impurities.

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_____ Description of quality control procedures.

_____ Identity of the source of product ingredients.

✓ Sales or other commercial/financial information.

_____ A draft product label.

_____ The product confidential statement of formula.

_____ Information about a pending registration action.

_____ FIFRA registration data.

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November 14, 2000

Office of Pesticide Programs - H7504C
Document Processing Desk
U.S. Environmental Protection Agency
Room 266A, Crystal Mall #2
1921 Jefferson Davis Highway
Arlington, VA 22202

Attn.: Mr. Phil Hutton, Production Manager #90

Subject: Production information for Bollgard® Cotton,
EPA Registration Number 524-478

Dear Mr. Hutton:

In accordance with condition 2 of the registration for Bollgard® cotton, we are submitting this production report for the fiscal year beginning 1 October, 1999 and ending 30 September 2000.

The total production in the U.S. during this time period is **[CBI DELETED]** pounds of seed.

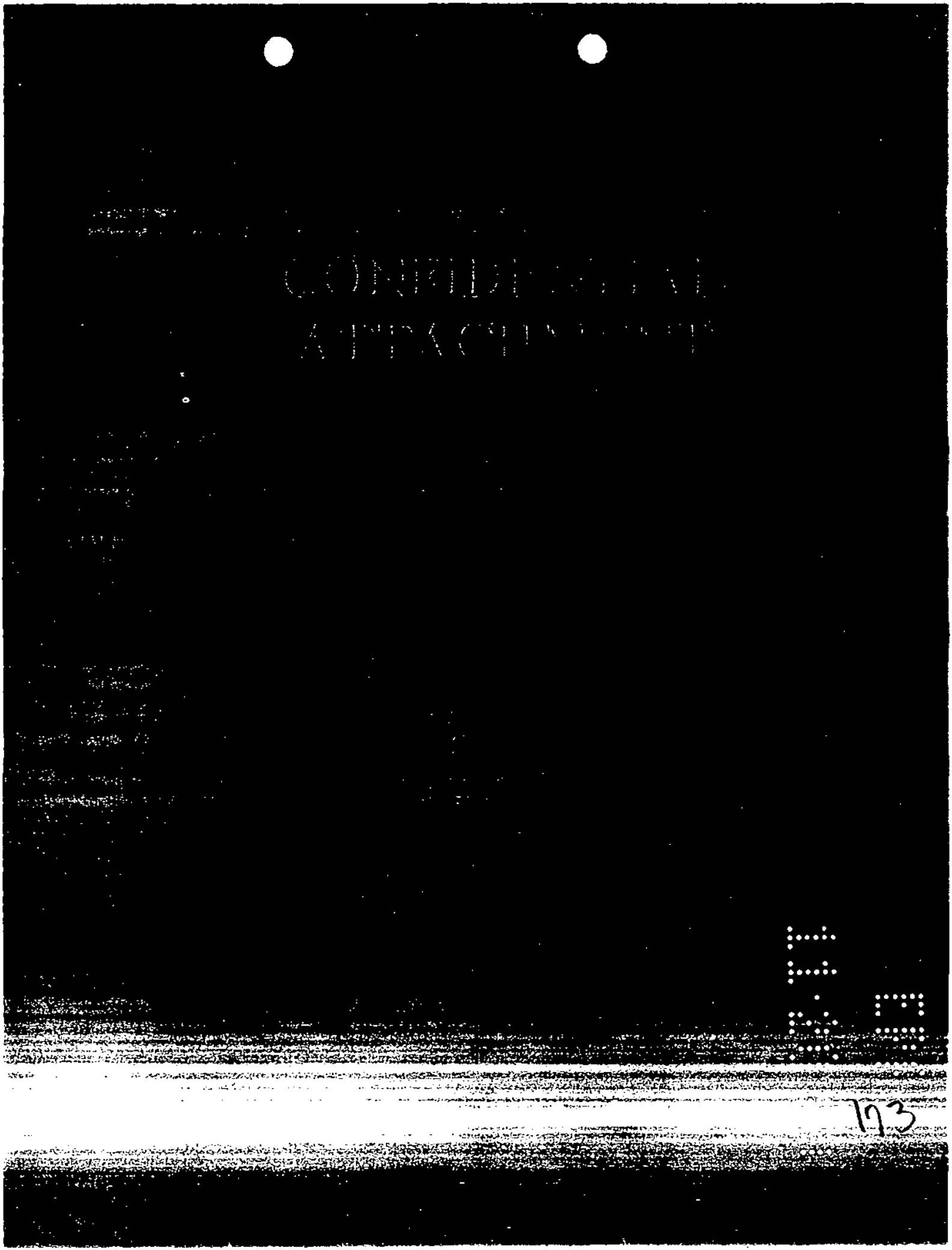
If there are any questions with regard to this submission, please call Dr. Russ Schneider at (202) 383-2866, or cal me directly at (636) 737-7618.

Sincerely,

J. Austin Burns
Regulatory Affairs Specialist, Cotton

cc: Dr. Russ Schneider
94-041E Files

178



CONFIDENTIAL ATTACHMENT

CBI CROSS REFERENCE

Deleted page: summary of Bollgard® cotton seed sold in year 2000.

Page	Reason for Deletion	FIFRA Reference
1	Discloses Confidential Sales Data	10(b)

174

CONFIDENTIAL ATTACHMENT

Summary of U.S. Bollgard seed sales in the year 2000.

Total Bollgard Sales (No. Bags)	Total Bollgard Sales (lb.)
1,153,292	**57,664,600**

175

(K

[redacted]

Phil Hutton

07/03/2000 01:51 PM

To: Willie Nelson/DC/USEPA/US
cc: Kathleen Knox/DC/USEPA/US, Mike Mendelsohn/DC/USEPA/US
Subject: Fwd: Revised Bt cotton IRM amendment review - see attached

Here is the review of the cotton IRM amendment. A hard copy is on my desk.

Note that Sharlene assumed that Monsanto would change the 100:5 option to 95:5 in both options 1 and 3 of their amendment. Since monsanto hasn't done that yet, the acceptance letter must tell them to change the acreages to 95:5 for those options (or go with 100:6, which also equals 5%).

I would get the amendment acceptance with comments letter ready for signature, just in case someone wants this to go out while I am gone this week. you never know.

The amendment acceptance should precede the FRN publication, as the FRN mentions that the cotton registration has been amended.

Mike has been working on the FRN for both the cotton and corn extensions. Mike, work with Willie to make sure the FR doesn't go out before the amendment is signed. The only late comment I have is that OGC prefers that the part about the rule go at the end of the document. Clear any changes at least with Kathleen and Suzie Hazen. sometimes others in OSCP, ask for changes on things that have already been decided upon by OGC and the 6th floor.

I will be staying at the Hilton in Greenville, NC. 252.355.5000, and also have my cell phone

301.743.8895

have a good week,

Phil

---------- Forwarded by Phil Hutton/DC/USEPA/US on 07/03/2000 01:34 PM ----------

SNDNB@aol.com on 06/30/2000 01:44:31 PM

To: Phil Hutton/DC/USEPA/US@EPA, Robyn Rose/DC/USEPA/US@EPA, Alan Reynolds/DC/USEPA/US@EPA, Sharlene Matten/DC/USEPA/US@EPA
cc:
Subject: Fwd: Revised Bt cotton IRM amendment review - see attached

---

Return-path: <SNDNB@aol.com>
Date: Fri, 30 Jun 2000 13:30:49 EDT

176

From: SNDNB@aol.com
Subject: Revised Bt cotton IRM amendment review - see attached
To: hutton.phil@epa.gov, rose.robyn@.epa.gov, reynolds.alan@.epa.gov, matten.sharlene@epa.gov
Message-id: <32.6d36111.268e3349@aol.com>
MIME-version: 1.0
X-Mailer: AOL for Macintosh sub 28
Content-type: multipart/mixed; boundary="Boundary_(ID_WJuYiezbBKOchZsG+HruZw)"
Full-name: SNDNB

Phil,

Attached is the revised review per our discussion this AM. Replace pages 2-6 -- nothing changed on page 1. Thanks for the comments. I think you will find the same sort of things might need to be changed in our longer review, but that is up to you.

Sharlene

 - cottonamend2000.wpd

MM

MONSANTO

Food · Health · Hope™

MONSANTO COMPANY
600 13TH STREET, N.W.
SUITE 660
WASHINGTON, D.C. 20005
TEL: (202) 783-2460
FAX: (202) 783-2468

July 5, 2000

Office of Pesticide Programs - H7505C
U.S. Environmental Protection Agency
Room 266A, Crystal Mall #2
1921 Jefferson Davis Highway
Arlington, VA 22202

Attention: **Mr. Phil Hutton**

Subject: **Registration amendment; EPA Reg. No. 524-478, revised amendment**

Dear Mr. Hutton,

Per our discussion and subsequent conversations with Mr. Willie Nelson, and Mr. Mike Mendolsohn, Monsanto is revising the registration amendment previously submitted to insure complete understanding. For each 100 acres of cotton planted, at least 5 acres will be non-Bt cotton and 95 acres can be Bt cotton.

If you have any questions or comments regarding this revision, please feel free to contact me at 202/383-2866 or Dr. Keith Reding at 314/737-7559.

Sincerely,

Russell P. Schneider, Ph.D.
Director, Regulatory Affairs

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Attachment 1. Proposed Modification to IRM Conditions of Registration 524-478

July 5. 2000

Monsanto requests the approval of the following language as part of the conditions of registration for Bollgard cotton.

Option 1. Ensure that at least 5 acres of non-Bollgard cotton (refuge cotton) is planted for every 95 acres of Bollgard® cotton. This refuge **MAY NOT** be treated with any insecticide labeled for the control of tobacco budworm, cotton bollworm, or pink bollworm. The size of the refuge must be at least 150 ft wide. The refuge cotton must be managed (fertility, weed control and management of other pests) similar to Bollgard cotton. The refuge must be planted within 1/2 linear mile from the edge of the Bollgard cotton field.

Option 2. Ensure that at least 25 acres of non-Bollgard cotton is planted as a refuge for every 100 acres of Bollgard cotton. All cotton **MAY** be treated with insecticides (excluding foliar *B.t.k.* products) labeled for control of the tobacco budworm, cotton bollworm, or pink bollworm. Ensure that a refuge is maintained within 1 linear mile (preferably within ½ mile) from the edge of the Bollgard cotton.

Option 3. Plant at least 5 acres of non-Bollgard cotton (refuge cotton) for every 95 acres of Bollgard cotton. Plant the refuge cotton embedded as a contiguous block within the Bollgard field. For very large fields, multiple blocks across the field may be used. For small or irregularly shaped fields, neighboring fields farmed by the same grower can be grouped into blocks to represent a larger field unit, provided the block exists within one square mile of the Bollgard cotton and the block is at least 150 ft. Within this larger field unit, one of the smaller fields planted to non-Bollgard cotton may be utilized as the embedded refuge. This refuge **MAY** be treated with any insecticide, excluding foliar *B.t.k.* products, labeled for the control of tobacco budworm, cotton bollworm, or pink bollworm **whenever the entire field is treated**. The refuge **MAY NOT** be treated independently of the Bollgard field.

For areas affected by only pink bollworm only, the refuge cotton may be planted as single rows within the Bollgard field.

In cases where placement of the refuge within one mile of the Bollgard cotton would be in conflict with state seed production regulations, the grower must plant the refuge as close to the Bollgard cotton as allowed by Attachment 2.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

To: Willie Nelson, Regulatory Action Leader
Biopesticides and Pollution Prevention Division, 7511C

From: Sharlene R. Matten, Ph.D., Biologist
Biopesticides and Pollution Prevention Division, 7511C 6/29/00

Peer Review: Alan H. Reynolds, Entomologist AHR 6/29/00
Biopesticide and Pollution Prevention Division, 7511C

Robyn I. Rose, Entomologist
Biopesticides and Pollution Prevention Division 7511C

Through: Phillip O. Hutton, Branch Chief PoH 7/10/00
Microbial Pesticides Branch
Biopesticides and Pollution Prevention Division, 7511C

Subject: Proposed Modification to Insect Resistance Management Conditions of Bollgard (Cry1Ac) Cotton Registration [Monsanto 524-478] – Amendment Request June 20, 2000

Action Requested:

This review contains an analysis of the adequacy of the proposed modifications to the Bollgard (Cry1Ac) cotton insect resistance management plan (EPA Reg. No. 524-478) for a nine month extension from January 1, 2001 to September 2001. The following three refuge options have been proposed: 95:5 external structured unsprayed refuge, 80:20 external sprayed refuge, and 95:5 embedded refuge.

Option 1: 95:5 external structured unsprayed refuge

"Ensure that at least 5 acres of non-Bollgard cotton (refuge cotton) are planted for every 100 acres of Bt cotton. This refuge may not be treated with any insecticide labeled for the control of tobacco budworm, cotton bollworm, or pink bollworm. The size of the refuge must be at least 150 ft. wide. The refuge must be managed similarly to Bollgard cotton. The refuge must be planted within ½ linear mile from the edge of the Bollgard cotton field."

180

Option 2: 80:20 external sprayed refuge

"Ensure that at least 25 acres of non-Bollgard cotton are planted as a refuge for every 100 acres of Bollgard cotton. All cotton may be treated with insecticides (excluding foliar *Bacillus thuringiensis kurstaki* products) labeled for control of the tobacco budworm, cotton bollworm, or pink bollworm. Ensure that a refuge is maintained within one linear mile (preferably within ½ mile) from the edge of the Bollgard cotton."

Option 3: 95:5 embedded refuge

"Plant at least 5 acres of non-Bollgard cotton (refuge cotton) for every 95 acres of Bollgard cotton. Plant the refuge cotton embedded as a contiguous block within the Bollgard field. For very large fields, multiple blocks across the field may be used. For small or irregularly shaped fields, neighboring fields farmed by the same grower can be grouped into blocks to represent a larger field unit, provided the block exists within one mile squared of the Bollgard cotton and the block is at least 150 ft. wide. Within this larger field unit, one of the smaller fields planted to non-Bollgard cotton may be utilized as the embedded refuge. This refuge may be treated with any insecticide, excluding foliar *B.t.k.* products, labeled for the control of tobacco budworm, cotton bollworm, or pink bollworm whenever the entire field is treated. The refuge may not be treated independently of the Bollgard field.

For areas affected by pink bollworm only, the refuge cotton may be planted as single rows within the Bollgard field.

In cases where placement of the refuge within one mile of the Bollgard cotton would be in conflict with state seed production regulations, the grower must plant the refuge as close to the Bollgard cotton as allowed."

Science Review:

The likelihood of tobacco budworm (*Heliothis virescens*), cotton bollworm (*Helicoverpa zea*), or pink bollworm (*Pectinophora gossypiella*) resistance to the Cry1Ac toxin will be somewhat less for the proposed time frame (until September 30, 2001) of the amendment than the two current mandated refuge options: 96:4 external unsprayed option and 80:20 external sprayed option. However, given the current models for predicting resistance these proposed refuge options are not sufficient for the long-term and other refuge options will need to be more fully evaluated.

Table 1. Caprio's Model for *H. zea* (CBW) Resistance Management (personal communication, 2000)

Refuge Option	Years to Resistance
Untreated In-field w/o proximity or width (more like a seed mix or single row)	
4%	3.46 years (+ 2 extinctions)
8%	All simulations went extinct
16%	5.3 years (+ 2 extinctions)
32%	9.5 years
Sprayed external refuges (treatment at 4% level with 90% efficacy of the larval population)	
0%	2.2
10%	7.25
20%	10.5
30%	14.5
Embedded untreated refuges (25% Dispersal)	
1.25%	19.0
2.5%	24.7
5.0%	30.4
10.0%	30.5
Embedded untreated refuges (50% Dispersal)	
1.25%	8.6
2.5%	10.3
5.0%	12.0
10.0%	22.4

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Refuge Option	Years to Resistance
Embedded untreated refuges (67% Dispersal)	
1.25%	7.0
2.5%	8.0
5.0%	12.0
10.0%	22.4

Dr. Mike Carpio's (Mississippi State University) simulations for untreated refuges show that a seed mix or single rows cannot be used effectively to manage CBW resistance. To substantially delay resistance more than 10 years, there would have to be greater than 30% non-Bt cotton in a (untreated) seed mix. Embedded (untreated) options clearly give the greatest benefit for resistance management with the least amount of non-Bt cotton planted. Dispersal dramatically affects the years of protection. High dispersal, 67%, will lower the degree of isolation between the refuge and the Bt cotton fields. Low levels of dispersal, 25%, will increase the degree of isolation between the refuge and the Bt cotton fields. This model does not consider the influence of alternate hosts, such as corn, on the development of *H. zea* resistance to Bt.

Options 1 and 3, 95:5 external unsprayed refuge option and 95:5 embedded option, offer two major improvements over the current 96:4 external unsprayed refuge option. These two improvements are: the structure requirement of having a refuge of at least 150 feet and placement requirement of the refuge within ½ linear mile from the edge of the Bollgard cotton field. These new requirements will increase adult dispersal and improve the likelihood of both random mating and random oviposition. These requirements also address one of the 1998 Science Advisory Panel Subpanel's concerns regarding adequate deployment of the non-Bt cotton refuge.

Caprio's model, an untreated structured refuge placed close to the field, e.g., less than one-half mile – the 25% or 50% dispersal cases, would increase the years to resistance substantially when compared to a 96:4 external unsprayed refuge that has no structure. However, if a 5% structured unsprayed refuge (25% dispersal) were treated, then the years to resistance would drop from about 30 years to about 5 years. The temptation for growers to treat an external unsprayed refuge would exist regardless of whether the refuge is more structured or not.

The width (size) of refuge also affects the years to resistance. Dr. Caprio suggests that a refuge of 100 rows or about 300 feet is more ideal. Increasing the width of the refuge will increase the likelihood that susceptible adult females will lay at least some of their eggs within the refuge and not within the Bt cotton fields (a "source-sink" effect). Resistance risk can be decreased if the

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width is increased from 150 feet to 300 feet, although the uncertainty is very high. Caprio's model indicates that a 100 meter wide embedded (untreated) refuge would be about 35-40% better (or about 5 years using the 50% dispersal scenario) than a 50 meter wide embedded (untreated) refuge (using the 67% dispersal scenario) although there is considerable uncertainty (Caprio, personal communication, 2000).

The big advantage of the 95:5 embedded refuge is that deploying the refuge within the field improves the likelihood of random mating between susceptible and resistant individuals and random oviposition. Refuge distance requirements and minimization of treatment of the refuge will increase the likelihood of success for the high dose/refuge strategy for insect resistance management in Bt cotton. However, the size of the embedded refuge may still be too small for the long-term.

Caprio explains (personal communication, 2000) that the embedded concept was developed as a compromise between an external sprayed refuge and an external unsprayed refuge to protect the grower from yield losses and reduce grower cheating. Allowances have been made so that growers would be able to spray the embedded refuge when the Bt cotton was sprayed while a 95:5 external unsprayed refuge (structured or unstructured) does not. If treatment of the entire field was necessary then both susceptible and resistant individuals should proportionately affected. Bt cotton fields (or set of fields) with embedded refuges should be sprayed less than an external refuge. There is little incentive for a grower using an embedded refuge to treat the narrow embedded refuge blocks when an economic threshold hasn't been reached in the Bt cotton portion of the field (or a set of small fields within a certain narrowly defined area).

Because PBW do not disperse to a great extent, <1000 meters (Tabashnik *et al.*, 1999), the ½ mile (or one mile) linear distance may not be adequate, but for the 2001 growing season, the resistance risk is unlikely to change and may actually decrease because of the structure requirements. A single row (or multiple rows) would be adequate for an in-field refuge to mitigate PBW resistance based on its limited dispersal.

Option 2, 80:20 external sprayed refuge is essentially the same as the current option except that a distance requirement has been included. The distance requirement, 1 linear mile (preferably ½ mile) from the edge of the Bollgard field, will improve the refuge efficiency of producing susceptible moths in close proximity to putative resistant moths. However, for PBW, the refuge may need to be placed closer to the Bollgard cotton fields. Based on the science, a ½ mile distance requirement would be better.

In the past, seed producers were exempt from the 96:4 external unsprayed and 80:20 external sprayed refuge requirements. Proposed refuge requirements would now include approximately 250,000 acres of seed production. This represents a significant improvement over the current insect resistant management requirements. In particular, Options 1 and 2 can be used by seed producers. Option 3, a 95:5 embedded refuge, cannot be used by seed producers because of see purity standards.

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The wording of Options 1 and 3 should be changed to reflect a 5% non-Bt cotton refuge. That is, Option 1 would read "ensure that at least 5 acres of non-Bollgard cotton (refuge cotton) is planted for every 95 acres of Bollgard cotton." Option 3 would be similarly worded.

References

Tabashnik, B.E., A.L. Patin, T.J. Dennehy, Y.-B. Liu, E. Miller, and R.T. Staten. 1999. Dispersal of pink bollworm (Lepidoptera: Gelechiidae) males in transgenic cotton that produces a *Bacillus thuringiensis* toxin. J. Econ. Entomol. 92(4): 772-780.

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MONSANTO

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MONSANTO COMPANY
700 CHESTERFIELD PARKWAY NORTH
ST. LOUIS, MISSOURI 63198
PHONE (314) 694-1000
http://www.monsanto.com

June 23, 1999

Office of Pesticide Programs - H7505C
Biopesticide and Pollution Prevention Division
U.S. Environmental Protection Agency
Document Processing Desk
Room 266A, Crystal Mall #2
1921 Jefferson Davis Highway
Arlington, VA 22202

Attn: Mr. Willie Nelson

Subject: *Bacillus thuringiensis* subsp. *kurstaki* insect control protein, as produced by the Bollgard® gene in cotton, EPA Reg. No. 524-478. Submission of 1998 Growing Season Sales and Research Progress Report.

Dear Mr. Nelson,

On October 31, 1995, Monsanto received an approval from the Agency to conditionally amend our seed increase/plant propagation registration to allow the additional use of the *Bacillus thuringiensis* subsp. *kurstaki* insect control protein, as produced by the Bollgard® gene, for food and feed in cotton in accordance with FIFRA § 3(c)(7)(B). Among the conditions of this amended registration, Monsanto is required to provide the Agency with production information in the United States for cotton containing the Cry1Ac protein. This production information is requested to contain acreage, locality and variety.

Please find enclosed the additional requested information to supplement the acreage report from October 22, 1998. This information was provided to you in person earlier this year. This information was, and is now, provided as confidential business information with the understanding that it will not be released in any form or compilation that would allow Monsanto's sales data to be deduced from such release.

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If there are any questions with regard to this submission, please call Dr. Russ Schneider at (202) 383-2866 or call me directly at (314) 737-6870.

Sincerely,

Karen S. Gustafson

Karen S. Gustafson
Assoc. Regulatory Affairs Manager

cc: Dr. Russ Schneider
94-041E Files

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Please read instructions on reverse before c... pleting form. Form App... ed. OMB No. 2070-0060, Approval expires 2-28-95

EPA

United States
Environmental Protection Agency
Washington, DC 20460

- [ ] Registration
- [ ] Amendment
- [x] Other

OPP Identifier Number: 198185

Application for Pesticide - Section I

1. Company/Product Number	2. EPA Product Manager	3. Proposed Classification
MONSANTO / 524-478	Phil Hutton	[x] None [ ] Restricted
4. Company/Product (Name)	**PM#**	
MONSANTO / Bollgard Cotton	90	

5. Name and Address of Applicant *(Include ZIP Code)*
Karen S. Gustafson
MONSANTO COMPANY
700 Chesterfield Pkwy No, St Louis, MO 63198
[ ] *Check if this is a new address*

6. Expedited Reveiw. In accordance with FIFRA Section 3(c)(3)(b)(i), my product is similar or identical in composition and labeling to:
EPA Reg. No. 524-478
Product Name Bollgard Cotton

Section - II

- [ ] Amendment - Explain below.
- [ ] Resubmission in response to Agency letter dated ____
- [ ] Notification - Explain below.
- [ ] Final printed labels in repsonse to Agency letter dated ____
- [ ] "Me Too" Application.
- [x] Other - Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)
Submission of 1998 Growing Season Sales and Research Progress Report for Bacillus thuringiensis subsp. kurstaki insect control protein. EPA registration No. 524-478 for Bacillus thuringiensis Cry1Ac delta endotoxin and the genetic material necessary for its production in cotton

Section - III

1. Material This Product Will Be Packaged In:

Child-Resistant Packaging	Unit Packaging	Water Soluble Packaging	2. Type of Container
[ ] Yes [x] No	[ ] Yes [x] No	[ ] Yes [x] No	[ ] Metal [ ] Plastic [ ] Glass [ ] Paper [x] Other (Specify) Plant Cells
* ***Certification must be submitted***	If "Yes" Unit Packaging wgt. / No. per container	If "Yes" Package wgt / No. per container	

3. Location of Net Contents Information	4. Size(s) Retail Container	5. Location of Label Directions
[ ] Label [ ] Container		[ ]

6. Manner in Which Label is Affixed to Product: [ ] Lithograph [ ] Paper glued [ ] Stenciled [x] Other ____

Section - IV

1. Contact Point *(Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)*

Name	Title	Telephone No. (Include Area Code)
Russell P. Schneider	Regulatory Director	(202) 383 - 2866

Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowlingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

2. Signature	3. Title	6. Date Application Received (Stamped)
Karen S. Gustafson	Assoc. Regulatory Affairs Manager	188
4. Typed Name	**5. Date**	
Karen S. Gustafson	June 23, 1999	

EPA Form 8570-1 (Rev. 3-94) Previous editions are obsolete. White - EPA File Copy (original) Yellow - Applicant Copy

Form Approved OMB No. 2070-0060

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
401 M Street, S.W.
WASHINGTON, D.C. 20460

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Certification with Respect to Citation of Data

Applicant's/Registrant's Name, Address, and Telephone Number Karen S. Gustafson, MONSANTO, 700 Chesterfield Parkway North, St. Louis, MO 63198	EPA Registration Number/File Symbol 524-478
Active Ingredient(s) and/or representative test compound(s) Bacillus thuringiensis subsp kurstaki Insect Control Protein	Date June 23, 1999
General Use Pattern(s) (list all those claimed for this product using 40 CFR Part 158)	Product Name Bollgard Cotton

NOTE: If your product is a 100% repackaging of another purchased EPA-registered product labeled for all the same uses on your label, you do not need to submit this form. You must submit the Formulator's Exemption Statement (EPA Form 8570-27).

☐ I am responding to a Data-Call-In Notice, and have included with this form a list of companies sent offers of compensation (the Data Matrix form should be used for this purpose).

SECTION I: METHOD OF DATA SUPPORT (Check one method only)

☐ I am using the cite-all method of support, and have included with this form a list of companies sent offers of compensation (the Data Matrix form should be used for this purpose).

☐ I am using the selective method of support (or cite-all option under the selective method), and have included with this form a completed list of data requirements (the Data Matrix form must be used).

SECTION II: GENERAL OFFER TO PAY

[Required if using the cite-all method or when using the cite-all option under the selective method to satisfy one or more data requirements]

☐ I hereby offer and agree to pay compensation, to other persons, with regard to the approval of this application, to the extent required by FIFRA.

SECTION III: CERTIFICATION

I certify that this application for registration, this form for reregistration, or this Data-Call-In response is supported by all data submitted or cited in the application for registration, the form for reregistration, or the Data-Call-In response. In addition, if the cite-all option or cite-all option under the selective method is indicated in Section I, this application is supported by all data in the Agency's files that (1) concern the properties or effects of this product or an identical or substantially similar product, or one or more of the ingredients in this product; and (2) is a type of data that would be required to be submitted under the data requirements in effect on the date of approval of this application if the application sought the initial registration of a product of identical or similar composition and uses.

✓ I certify that for each exclusive use study cited in support of this registration or reregistration, that I am the original data submitter or that I have obtained the written permission of the original data submitter to cite that study.

I certify that for each study cited in support of this registration or reregistration that is not an exclusive use study, either: (a) I am the original data submitter; (b) I have obtained the permission of the original data submitter to use the study in support of this application; (c) all periods of eligibility for compensation have expired for the study; (d) the study is in the public literature; or (e) I have notified in writing the company that submitted the study and have offered (i) to pay compensation to the extent required by sections 3(c)(1)(F) and/or 3(c)(2)(B) of FIFRA; and (ii) to commence negotiations to determine the amount and terms of compensation, if any, to be paid for the use of the study.

I certify that in all instances where an offer of compensation is required, copies of all offers to pay compensation and evidence of their delivery in accordance with sections 3(c)(1)(F) and/or 3(c)(2)(B) of FIFRA are available and will be submitted to the Agency upon request. Should I fail to produce such evidence to the Agency upon request, I understand that the Agency may initiate action to deny, cancel or suspend the registration of my product in conformity with FIFRA.

I certify that the statements I have made on this form and all attachments to it are true, accurate, and complete. I acknowledge that any wingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

Signature	Date	Typed or Printed Name and Title
Karen S. Gustafson	June 23, 1999	Karen S. Gustafson, Assoc Reg Affairs Manager

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
401 M Street, S.W.
WASHINGTON, D.C. 20460

DATA MATRIX

Date 6/23/99	EPA Reg No./File Symbol 524-478	Page 1 of 1
Applicant's/Registrant's Name & Address Karen S. Gustafson, Monsanto Co, 700 Chesterfield Pkwy No, St. Louis, MO 63198	Product Bollgard Cotton	

Ingredient Bacillus thuringiensis subsp kurstaki Insect Control Protein Cry1Ac as expressed in cotton

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
	Administrative Materials in Support of the Request for the Registration and Exemption from the requirement of a Tolerance for the Plant Pesticide *Bacillus thuringiensis* var. *kurstaki* (*B.t.k.*) insect control protein (Cry1Ac)		Monsanto	OWN	

Signature	Name and Title	Date
Karen S. Gust	Karen S. Gustafson, Assoc. Reg Affairs Manager	23-Jun-99

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DATA MATRIX

Date 6/23/99	EPA Reg No./File Symbol 524-478	Page 1 of 1
Applicant's/Registrant's Name & Address Karen S. Gustafson, Monsanto Co, 700 Chesterfield Pkwy No, St. Louis, MO 63198	Product Bollgard Cotton	

Ingredient Bacillus thuringiensis subsp kurstaki Insect Control Protein Cry1Ac as expressed in cotton

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
[redacted]			Monsanto	OWN	

Signature	Name and Title	Date
Karen S. Gust	Karen S. Gustafson, Assoc.Reg Affairs Manager	23-Jun-99

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Administrative Materials

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